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Battelle Memorial Institute

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METAL STATISTICS

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TWO LINE *Editorials*

One of the numerous things we can't understand about King Saud is why a man with an annual income of $300,000,000 needs to borrow $50,000,000.

* * *

A safety expert writes that every motorist should stop at intersections and wait for cross traffic to pass before proceeding. Sounds like an ingenious and effective scheme for creating a colossal and permanent traffic jam.

* * *

When the automobile engineers say that "next year's cars will be lower," they are of course speaking of the car's distance from the ground and not its price.

* * *

Messrs. Khruschev and Bulganin say they hesitate to visit the United States for fear they may be "treated like criminals." Well, isn't that the way criminals should be treated?

* * *

A news item says that "every baby is born owing the Government $1,939." Maybe that's the reason a baby spends so much time wailing.

* * *

A Tennessee truck driver who was shot sixteen times by an unknown assailant says "I believe he was trying to kill me." Some people are quick to catch on to things like that.

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Automobile Radiators

Washington Report

March 6, 1957

THE Government has taken cognizance of the easier supply situation for both copper and aluminum, and during the month in review it relaxed export restrictions on the scrap grades of these metals.

The U. S. Commerce Department's Bureau of Foreign Commerce, on March 4, open-ended exports of scrap copper and brass during the balance of the first quarter and for the second quarter, issued a supplementary export quota of 2,000 tons for scrap aluminum in the first quarter, and eased licensing restrictions on certain nonferrous metals. BFC also announced export quotas for the second quarter for rerolling rails, relaying rails and used rails, and clarified a recent ruling concerning scrap iron exports.

Copper Scrap Exports

Exports of both new and old unalloyed copper scrap (Schedule B 641300) and new and old copper-base alloyed scrap, containing less than 5 per cent nickel (644000) were open-ended. These materials previously were under quota. Under open-end licensing no quantitative limits are set but surveillance from a short supply viewpoint is maintained and exports are controlled to protect the national security, according to BFC.

Restrictions also were eased on copper-nickel alloy scrap, containing 40 per cent or more copper and 5 per cent or more nickel. Export licenses for these items, previously not approved by BFC, now will be considered for approval if the applicant certifies that at least 90 per cent of the nickel content of the scrap exported will be returned to the U. S. A. in the form of nickel metal.

Evidence of availability for export no longer is required for applications covering refined copper (641200) or aluminum metal and alloys in crude form (630070).

The first quarter export quotas for aluminum scrap (630050) and aluminum remelt ingots (630070), originally set at 5,000 short tons, was increased for the period to 7,000 tons as a result of the supplementary 2,000-ton quota. The export quota for the second quarter was established at 8,000 tons. Applications for export licenses against the supplemental first quarter quota had to be submitted not later than March 21, with the filing period for second quarter license applications set at April 1-June 14.

Rerolling, Used Rails

The second quarter export quota for rerolling rails (601170) was set at 10,000 short tons, of which no more than 5,000 tons will be licensed for shipment to any one country; the same quota and restriction had prevailed for the first quarter. The second quarter quota for used rails (605110 and 605210) was fixed at 4,500 tons, unchanged from the first quarter quota.

On February 27 the BFC announced licensing of heavy melting scrap to Japan, the European Coal and Steel Community and the United Kingdom remained suspended. In a clarifying statement on March 4, BFC said new export license applications for heavy melting scrap, as well as applications already submitted, will be considered under the new "hardship" criteria for licensing this grade of scrap. Licensing to other destinations will continue without curtailment, as does licensing to all destinations of non-military grades of scrap.

Barter Program Endorsed

The Administration favors the swapping of surplus U. S. farm commodities for metals from abroad through June, 1958. This was disclosed by Felix E. Wormser, Assistant Secretary of Interior for Mineral Resources, speaking before the National Western Mining Conference of the Colorado Mining Association.

Last year over 100,000 tons of zinc alone were exchanged for wheat and other domestic agricultural products, Mr. Wormser said. He emphasized that the metals acquired under the program are locked up in a supplemental stockpile and cannot be disposed of or sold without an act of Congress. He pointed out that excess supply of a metal or mineral overseas should be mopped up by a barter transaction for storing in the U. S. supplemental stockpile and thus remove the depressive influence of the excess supply on the world price.

January Barter Contracts

The Department of Agriculture reported barter contracts for supplemental-type strategic materials signed in January at a total value of $36,800,000. The January total compares with $11,800,000 for December and $11,300,000 in January, 1956, and $104,900,000 for the full fiscal year 1956.

Supplemental-type strategic materials contracted for in January of this year included: titanium sponge, $33,100,000; electrolytic manganese metal, $2,500,000, and zinc, $1,200,000.

As of December 31, 1956, strategic materials acquired through barter and held in the Commodity Credit Corp. inventory pending transfer to the stockpile with reimbursment to CCC were valued at $241,968,976. Among the materials held in the CCC inventory at that date were: lead, $5,014,101; zinc, $20,112,882; antimony metal, $1,035,922; abrasive, crude aluminum oxide, $2,451,039; cadmium, $6,450,987, and manganese, $50,142,881.

Stockpile Takings Cut

Meanwhile, the Government's monthly purchases of domestic lead and zinc for the long-term stockpile continued to taper off, as was anticipated. It was more or less common knowledge that the General Services Administration accepted less of the tonnages of both metals offered to it on February 26 (delivery to be completed April 15) than it did in January. Further reductions in GSA's lead purchases are likely to be made by the GSA between now and the end of June when the 200,000-ton goal for the metal will have been achieved if not exceeded. The situation for zinc purchases is quite similar, with the GSA apparently trying to stretch out its monthly buying to the end of June by which time the funds allotted for this program will have been expended.

The Government has let it be known that the U. S. surplus farm product barter program for foreign lead and zinc will continue to the end of June, 1958. Domestic producers of the metal, naturally would be expected to take a dim view of this foreign program which would leave them out

(Continued on Page 19)

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EXPANDING NEED IN NUCLEAR AGE FOR VARIETY OF METALS WITH SPECIAL PROPERTIES, APPLICATIONS

'Superalloys' Require Nickel, Cobalt, Molybdenum; Find New Uses For Titanium, Zirconium, Beryllium; Magnesium Outlook Promising

By DAVID D. MOORE, Industrial Economics Division Chief, Battelle Memorial Institute

THE United States has built a standard of living that makes us the envy of the world. But maintenance of this standard is not enough; we must continue to improve it. Metals have been a dominant if not an overriding factor in the development of our economy — this in spite of the fact that we are a "have not" nation in many of the critical supporting alloying and nonferrous elements. John Sullivan of Battelle in a recent paper has pointed out the desirability of increasing our metal consumption, if we are to continue our dominant role.

Applications of titanium, zirconium, and beryllium as tonnage metals are brand new and reflect the special requirements of our "supersonic" and "atomic" age. Nickel, cobalt, and molybdenum represent some of our essential alloying elements that have achieved increased importance with the expanded needs for "superalloys" to open the door to a new era, while magnesium continues to offer the promise of a real lightweight, tonnage metal backed by a "limitless" source of raw material.

Titanium

Since 1948, when a little over two tons of titanium metal were produced, United States production of titanium sponge has skyrocketed to approximately 14,100 tons in 1956. This output is expected to increase 50 per cent during 1957, while sponge production upwards of 30,000 tons is envisioned for 1960-1965.

Some 10,900 tons of sponge were melted with 2,000 tons of scrap to make 11,600 tons of titanium ingots. Some 10,700 tons of ingot were used to produce 5,100 tons of mill products. This output of mill products represents a 170 per cent increase over the 1955 production of 1,898 tons. By 1958, the demand for mill products is expected to reach 15,000 tons, or almost 3 times that of 1956.

How is this market to be distributed? Upwards of 90 per cent or more of these requirements will probably be in military applications; principally jet aircraft prime movers, and structural parts. The high strength to weight ratio has been the primary factor influencing usage of titanium in military aircraft. In this usage, operating capabilities have been more important than cost relative to other metals and alloys. In the immediate future, forgings are expected to require the greatest tonnage. Based on present levels of aircraft production, this demand for tianium should tend to peak and level out until new models reach production. Then, as aircraft speeds increase to Mach 3 and higher, requirements for sheet are expected to again supercede forgings in tonnage. Extrusions may account for 10 per cent or more of the titanium needs in these high-speed craft.

Other military possibilities lie in Ordnance for tank and gun mount components and various specialty items where light weight is an important or overriding criterion. Navy usage for other than aircraft will be in various specialty items. Tonnage consumption by both Ordnance and the Navy is contingent on a substantial price reduction. Assuming price levels for mill products one-quarter to one-third present quotations, uses for several thousand tons of titanium annually should develop.

Non-Military Applications

Non-military applications the same as Ordnance and Navy are contingent on a lower price. Present commercial markets are principally aircraft. So far, Douglas is the only user; the DC-7 consuming about 800 pounds of raw weight (400 pounds finished weight). The Douglas DC-8 is expected to consume possibly twice as much, and the commercial version of the Boeing 707 is also expected to utilize some titanium. On the other hand, the principal nonmilitary markets that are expected to be developed will be where better corrosion resistance is necessary or more economical. The chemical process industries are expected to furnish the largest such market.

Numerous pieces and types of specialty equipment have been placed in operation during the past two years and necessary experimental information is being collected. Development of suitable titanium castings should lead to substantial new markets in American industry. Other major industries where titanium equipment is expected to find large-scale usage are pulp and paper, food, metallurgical leaching, and marine applications. Last but by no means least, titanium is expected to find considerable application in nuclear reactors and reprocessing systems. The form and quantity will depend on the types of reactors that eventually may be adopted.

Titanium Scrap Recovery

One of the big problems associated with the future price and therefore demand for titanium is concerned with scrap. Kellogg in a recent paper has estimated that the present ratio of sponge to salable product is 1.5 to 1 and predicts that this can be reduced to 1.2 to 1 within the next 5 to 10 years. On the other hand, scrap generated by the ultimate user has been estimated to be about 50 per cent compared with 10 per cent for aluminum in similar applications. While a substantial percentage of the pure scrap can be remelted with sponge satisfactorily, use of alloy scrap is going to be limited until satisfactory methods of refining are developed. The building of a pilot plant for refining scrap into pure metal by an electrolytic process has been announced. But until more information has been obtained, the relative economics are still undetermined. Conversion of scrap to castings and usage in various corrosion applications appear to offer considerable promise.

Summarizing, it is believed that the production of titanium sponge should reach about 22,500 tons this year, having a value in excess of $100 million; by 1960-1965, the demand for sponge may lie between 30,000 and 35,000 tons and worth approximately $140 million or so. Should these levels be reached, resale value of scrap in the hands of the ultimate producer of finished parts should be in the order of $15 to $20 million, (5,000 tons of contained titanium) assuming that fabricating improvements can cut present scrap losses in half.

To attempt a projection of titanium production much beyond 1960-1965 is subject to so wide a margin for error as to be virtually meaningless. Military aircraft design will still be the overriding factor governing its use, while the world situation will tend to influence the numbers and type of aircraft that may be desired. Thus, output, say in 1965 and beyond, could be anywhere from that envisioned earlier to several times as great.

Zirconium

Zirconium, like titanium, has been a post-war growth metal, although

Address at 44th Annual Convention of National Association of Waste Material Dealers, Chicago, Ill., March 12, 1957.

the growth in this case is principally a result of nuclear energy demands. Zirconium production (hafnium free) has grown from a few thousand pounds in 1949 to approximately 460,000 pounds (230 tons) in 1956. Expansion of production facilities to an estimated 2,000 tons (4 million pounds) is scheduled for 1959. (See Table A for a breakdown).

Of this amount, the Atomic Energy Commission has contracted for delivery of approximately 12 million pounds (6,000 tons) over the next five years, or roughly three-fourths of the estimated total productive capacity over the same time period. On the assumption that supplies presently contracted for by the AEC are to supply projects already under way, substantial increases in presently planned zirconium capacity may be expected during the next five years. The Carborundum Metals Company has recently stated that it is selling reactor grade sponge on the open market at $9.50 per pound and expects to have 350,000 pounds annually available for delivery to the open market starting in July, 1957, two-thirds of which is uncommitted. Contract prices with AEC are The Carborundum Metals Company, $7.72 per pound; The NRC Metals Company, $6.50 per pound; and The United States Industrial Chemicals Company, $4.53 per pound.

Table A
ESTIMATED PRODUCTIVE CAPACITY OF ZIRCONIUM SPONGE, 1956 AND 1959

(In Pounds)	1956	1959
Bureau of Mines Plant (Leased to Wah Chang Corporation)	150,000	300,000
The Carborundum Metals Co., Akron, New York and Parkersburg, West Virginia	320,000	1,525,000
NRC Metals Co., Pensacola, Florida	.....	700,000
United States Industrial Chemicals Co., Ashtabula, Ohio	.....	1,500,000
Total	**470,000**	**4,025,000**

Use in Reactor

Zirconium (hafnium free) has an extremely low thermal neutron absorption cross section and good corrosion resistance to water at high temperature, which makes it of considerable interest in certain types of atomic reactors as a structural material, and, more importantly, as a cladding material for fuel elements. The Navy's atomic submarine program, using pressurized water reactors in all but the "Sea Wolf" provides a ready-made market for zirconium both in the reactors and in the replacement of fuel elements. Other marine nuclear power plants may be expected to favor zirconium, but the case for electric power generating plants is not so clear. The AEC-Duquesne Power Co., the Yankee Atomic Electric Co., the Consolidated Edison Co., and the Commonwealth Edison Co. reactors will all use appreciable quantities of zirconium. On the other hand, higher fuel temperatures (in the range of 600 F for cladding and 900 F for structural parts) and other types of reactors may be needed to achieve cost rates for power generation competitive with conventional sources. These conditions may be beyond the physical capabilities of zirconium forcing the use of lower cost but more inefficient materials such as stainless steels or higher cost materials such as columbium.

Present costs of zirconium must be reduced drastically before nuclear power using zirconium-clad fuel elements can become competitive with large-scale conventional electric power plants, even if operating conditions permit use of zirconium. However, possibilities of substantial cost reductions do exist, through higher production rates and improved fabrication techniques. An important element in the cost lies in the scrap, so that scrap recovery and utilization could be of substantial benefit. Although it appears unlikely that zirconium could be recovered economically from the aqueous solution used in present fuel-reprocessing procedures; new methods, possibly utilizing pyrometallurgical techniques, may prove of commercial promise.

Non-Nuclear Uses

Non-nuclear applications of zirconium have been limited to a few specialty items, principally as a "getter" material in vacuum tubes. Foote Mineral Co., the original producer of ductile zirconium in this country started operations in 1940 using the iodide process to produce zirconium crystal bar selling for $200 to $300 per pound. After the war, Westinghouse entered the field using the same process to meet its nuclear needs for the AEC but with the advent of Kroll process sponge has restricted production, if any, to its own use.

Zirconium has good resistance in many corrosive media, comparing favorably with tantalum in many applications both in price and in service. Titanium, on the other hand, has a considerable price advantage and shows a better resistance in many areas particularly when exposed to salt (sodium chloride).

Zirconium metal powder has largely replaced ductile zirconium as a "getter" in vacuum tubes. This use is now in the order of 10,000 pounds (5 tons) annually compared with a few hundred pounds of ductile metal. Other applications for powder are in photoflash bulbs, smokeless powder, and various pyrotechnics. Requirements are in the order of 5 tons or more annually. Another use worth mentioning is as a replacement for tantalum in orthopedic surgery. As zirconium is considerably lighter, lower cost, and more ductile, this application may require several tons annually.

Summing up, non-nuclear requirements will be a minor segment of the overall demand for zirconium during the next several years. But as prices of ingot are reduced and more information is gathered concerning the applicability of zirconium in various corrosive media, non-nuclear use will expand considerably. This might reach a level of 1 million pounds (500 tons) annually within the next five years or so.

Beryllium

Beryllium has received quite a play in the news during the past few months, and in certain respects may be likened to the situation with titanium some 10 years ago. Beryllium has inherent properties, and imparts certain properties to other metals, that make it attractive for research and development activities. On the other hand, high cost, limited availability of high-grade raw material supply, and toxicity offer virtually insurmountable obstacles to real mass production. The present major commercial use for beryllium is alloying with copper to impart special improved fatigue, corrosion, heat, and wear qualities. Other commercial applications include alloying with nickel to improve tensile strength and heat treatability and use of the oxide in special ceramics.

Its possible use in other areas, however, is where present interest lies. Personnel concerned with development of nuclear energy have been looking at beryllium because of its light weight and low-neutron capture cross section. Last fall the AEC announced the awarding of contracts to Brush Beryllium and Beryllium Corporation to produce 500,000 pounds each over a five-year period at an average price of $49 per pound, or about

half the price of atomic-grade beryllium available at that time.

Beryl is the only ore of beryllium that is presently of commercial importance. It has been produced as a by-product in the handsorting of feldspar, lithium minerals, and mica. World output amounted to approximately 8,700 tons in 1955 of which U. S. production was about 500 tons. Imports totaled 6,037 tons giving a domestic supply of 6,537 tons, averaging about 10 to 12 per cent beryllium oxide or 4 per cent beryllium. Apparent consumption was almost 4,000 tons, equivalent to 140-150 tons of beryllium. Various pegmatites containing beryl in small percentages offer a potential source of additional supply if needed, and the Bureau of Mines is working on continuous flotation methods of separation, but pending such a development costs would be somewhat above present levels of $40 to $50 per unit of beryl ($5 to $7 per pound of contained beryllium).

Suitable Alloy Needed

In addition to nuclear energy applications its "potentially spectacular" use in piloted aircraft and in missiles has been mentioned by Rand Corporation. Its excellent strength-to-weight ratio offers very interesting possibilities for special airborne applications. A major difficulty has been its brittleness. If a suitable alloy can be developed, substantially increased demand over presently planned supplies would be assured.

The other and, in some respects, the major deterring factor to growth in beryllium is the toxicity of many beryllium compounds. But given sufficient need for beryllium, this danger can be minimized through adequate ventilating and extreme care in handling.

Molybdenum

In 1955, the United States produced about 92 per cent of the world output of molybdenum concentrates, amounting to almost 62 million pounds (31,000 tons) of contained molybdenum. Exports amounted to 12 million pounds. Essentially all molybdenum concentrates are rooted to the technical oxide, from which other products are made. Shipments to domestic users amounted to some 36 million pounds (18,000 tons) of contained molybdenum broken down as follows:

(In Pounds)

	Shipments
Molybdic oxide	26,009,000
Molybdenum metal powder	345,000
Ammonium molybdate	165,000
Sodium molybdate	219,000
Other (ferromolybdenum, calcium molybdate, cobalt molybdenum, etc.)	9,197,000
	35,935,000

About 70 per cent of the molybdenum is consumed in steels, about 15 per cent in cast iron and malleable castings, and the balance in compounds and as the pure metal. Additions in fractional percentages are commonplace in alloy and stainless grades, while some specialty steels use several per cent of molybdenum in their composition. The advantages gained through these additions of molybdenum are manifold and well-known, so will not be discussed in this paper. Suffice to say, the future of molybdenum is inextricably linked to that of stainless alloy steels and cast irons. Taking into account the increasing need for stainless and higher alloys, by 1965 consumption of molybdenum in that field should be in the range of double present requirements. Chemical usage may also be expected to show substantial growth in areas such as lubricants, catalysts, and fertilizers. The metal is used in electrical, electronic, and other special high-temperature applications.

High Melting Point

Molybdenum as a metal has attracted considerable attention in recent years because of its very high melt point (4720 F, plus or minus 18 F). The need for metals with better high-temperature characteristics has been one of the limiting factors in development of jet engines, missiles, and nuclear electric power generation. Unfortunately, the rapid oxidation characteristics or elevated temperatures limits molybdenum's usefulness. This disadvantage has been overcome in some applications by using coatings such as a siliconized coating which is resistant at temperatures up to 3002 F.

Admiral Rawson Bennett, Chief of Naval Research, in a meeting January 30, 1957, before the Institute of Aeronautical Sciences stated that the core of the Navy's high-temperature materials program centered around molybdenum base alloys and boride cermet compositions. Dr. E. M. Sherwood of Battelle recently reviewed developments in molybdenum technology and concluded in part that coatings rather than molybdenum-base alloys would be the likelier development. Considerable research is being conducted on molybdenum metal and it is reasonable to assume that this will lead to a decided expansion in its usage over the next several years. But until a technological breakthrough occurs it is believed that usage as a metal will remain a minor segment of the overall market for molybdenum.

Nickel

During the past several years, stockpiling requirements and the impact of current defense needs have kept nickel in short supply. This condition has forced those concerned with the development of new and improved alloys to design away from nickel in so far as practicable. By so doing, the peace time usage of nickel has been kept relatively constant in the face of an expanding economy and a greater need for metallic materials.

There is good reason to believe that the availability of nickel will soon change from one of controlled scarcity to one of relative abundance. Mr. H. S. Wingate, president, International Nickel Company, has recently announced a $175 million development at Mystery-Moak Lakes, Manitoba, which when completed in 1960 or 1961 will increase International Nickel's productive capacity some 50 per cent to 385 million pounds (197,500 tons). Total Free World capacity in 1955 was estimated at 427 million pounds (213,500 tons) Mr. Wingate forecasts this capacity to increase by 1960 to between 600 million and 625 million pounds (300,000 to 312,500 tons), or some 325 million pounds, (162,500 tons) in excess of present civilian consumption. Obviously, unless defense needs remain quite high, there will have to be substantial stimulation in the development and expansion of uses for nickel in the Free World in order to maintain high production rates.

Potential Markets

Let us examine some of these potential markets in the United States. Stainless steel consumed 53 million pounds (26,520 tons) in 1955, exclusive of purchased and home scrap. Based on reported consumption through October 1956, the use in 1956 amounted to about 63 million pounds, an increase of 10 million pounds or 19 per cent. The automotive industry is the largest user of stainless steel, accounting for better than 20 per cent of the marketed products. The past market has been principally for trim and decorative purposes and has fluctuated with availability of nickel and styling. On the other hand, use of stainless functionally is expanding and when and if the automotive gas turbines become production models usage of nickel will probably be increased substantially. Assuming a requirement of 10 pounds of nickel per turbine, production in 5 million cars would require 50 million pounds compared with total consumption of 28 million pounds in automotive products during 1955.

Aircraft are the next largest market for stainless, shipments amounting to 4.5 million pounds in 1955. As speeds increase, use of stainless in airframes will expand rapidly. Combined with the increasing need in jet engines, the total demand for stainless in aircraft may double during the next five years.

Developments in nuclear energy applications as they occur will create an entirely new market. It is still too early to predict the types of reactor that will become most prevalent. Neither can one project with any degree of accuracy, the timing of nuclear power developments. However, it seems reasonable to assume

(Continued on Page 18)

GROWING USE OF SUBSTITUTES IS MOST IMPORTANT LONG-TERM PROBLEM FACING BRASS, BRONZE TRADE

1956 Ingot Consumption Was 6% Below '55 While Basic Prices (85's) Dipped From 44c in April to 35c in December; Better Quality May Increase Sales

By JOSEPH HARRIS, Benjamin Harris & Company

TO MY MEMORY it seems to have become axiomatic that these little talks each year in exposition of the appointed subject have become to a more or less extent the retelling of the statistical experiences of the past year—as those figures affect the subject matter. Certainly much effort was expended in grouping them to make attractive listening and in some instances the speaker met with success because his discourse carried along those in the audience most closely allied to his particular segment of our industry.

However, those in other branches of the Secondary Metal field were usually left behind, even though they may have been aware that the figures given carried through exciting and impressive periods pricewise and tonnagewise. I mean no reflection on the intelligence, ability, nor earnestness of the speakers.

Knowing, therefore, that the 1956 figures for the brass and bronze ingot industry were far from impressive or interesting, with very few exceptions, and realizing that the chronicler of distasteful history is rarely listened to, I decided to highlight only those statistics which were pertinent to this different approach to the subject. I hope it will provide a basis of interest for most of this metal group.

1956 Basic Facts

Here then basically are the facts of the metal year as they relate to brass and bronze ingot.

Weighted average copper prices rose from 43⅝c in January to 47½c, in July, then down to 35½c, in December for a net change in the year of 19½ per cent. The consumption of copper for the year was increased 2 per cent over 1955. Ingot basic prices rose from 42c (85's) in January to 44c, in April, then down to 35c in December for a net change of the year of 18 per cent. The consumption of brass and bronze ingot for the year was 6 per cent below 1955. Exports of copper and copper-base scrap were slightly below 1955.

Not too bad a picture you conclude.

JOSEPH HARRIS

You say, the ingot smelters are a hardy lot accustomed to rolling with a punch and putting up a scrap (no pun intended), and you are, or rather have been, right. For many years we have taken on burdens in the form of increasing manufacturing costs, foreign competition (both on ingot into, and scrap out of the country), freight rate boosts, spiralling wages, and a number of other additional production and handling costs, all of which we have absorbed. We have been unable to do as other industries, pass those costs on to the consumer.

This situation prevailed to the point of making it difficult to obtain a fair return on the ever mounting investment in plant and equipment.

Substitutions

As hard as this problem pressed us, I, and others, have felt that there was one far, far more important problem, from the long range viewpoint, and that was the matter of substitutions. The fight should have left the accountants' desks sooner. Those in closest contact with the enemy, substitution, have been our consuming alloy friends, the brass and bronze foundries, who have had a rough time. Their efforts to make and sell brass and bronze castings have been jostled, not only by the jarring gyrations in copper prices which I have mentioned earlier, but by a succession of new entrants such as plastics, aluminum, steel stampings, zinc, and lead base die castings and pressed powder metal, to mention only a few.

Certainly you who are in the secondary metal field will readily admit the list is an imposing array of established antagonists. You will also be forced to admit it will be difficult to dislodge many if any of them even though the lower price of copper has reduced the competitive area somewhat. Perhaps cheaper and more abundant supplies of copper will be available, through improved production methods or new rich ore finds, and in that event help will be found.

We are not hopeful of the latter but are not entirely without defense. We have recognized that it will be difficult to maintain the industry's volume with its only enhancement the increase in population level. To try to help we have over the years, lowered the foundry's costs by improving the quality of ingot through newer refining and cleaning methods and by learning a great deal about the gradation of harm certain impurities have on casting properties. Our technicians have been forced to learn some of the requisites (both chemical and physical) of suitable castings for a great many industries in order to set up procedures to manufacture ingot metal "by chart and not by chance," to use an apt advertising slogan.

Research

This awareness of the need for a continuing program of cooperative research in the industry, although instituted many years ago, has taken the form of a recently accelerated physical research program. It is teaching us that a great many of the important physical qualities, attributed in technical publications to the majority of the brass and bronze alloys that the foundries purchase, have never been scientifically substantiated. Results obtained even at this early stage are very enlightening to us and will be very helpful to the originators of specifications to the brass and bronze foundries — the mechanical, metallurgical, architectural and electrical engineers.

Wonderful new properties of some alloys have been uncovered. They have opened up chances for industry wide switches in casting uses which are exciting to contemplate. In other alloys the modern refining

(Continued on Page 16)

Address at 44th Annual Convention of National Association of Waste Material Dealers, Chicago, Ill., March 12, 1957.

CONSUMER RELUCTANCE TO BUY BRASS MILL ITEMS REFLECTS UNSETTLED MARKETS, PRICE DECLINES

Domestic Industry Also Facing Competition From Imported Products; Improved Dealer Grading and Packing Would Encourage Use of Scrap

By HAROLD LEWIN, Lewin-Mathes Company

I AM SURE that the primary question today is, "Why doesn't the brass mill industry use more scrap?" It is my personal feeling that the large consumption of scrap by the brass mills during the last two or three years is not a true picture of what we may expect in the future. Primary copper was in short supply during this period, and consumption of scrap rose to abnormal heights. Now that primary copper is readily available, I believe the mills are now consuming a normal amount of scrap.

Most mills were not set up to handle scrap, and many technical difficulties were encountered. Even though the dealers put forth great effort and expense to prepare No. 1 copper, many problems arose from the use of this grade. During the period of extreme metal shortage, the manufacturer was willing to absorb the high cost and difficulties in using this type of material in order to supply their customers. Today, this is not necessary. The figures issued by various agencies of the Government and trade associations show a sizable consumption of scrap by the mills each month. Don't let these figures mislead you, because they include mill run-around scrap, and scrap returned by customers directly to the mills. The consumption of this material must come first. In a period such as we are experiencing now, the tonnage from these sources alone is sufficient for most mills.

No doubt, many of you are asking the question, "Why doesn't the spread between scrap and new metal narrow with the lowering of the base price?" I believe the answer is simple. Costs of handling and smelting scrap still remains very high. Labor cost, being the most important, continued to rise. We don't recall a reduction in price in any of the many supply items we purchase to carry on our production.

Improved Packing

Along with the discussion of costs goes the subject of improved packing and grading by the dealers. We feel that the dealers are falling behind the times on this subject. By comparison, the producers of new materials are doing a very good job. Items such as copper cathodes and billets, zinc slab and pig lead are bundled into packages weighing up to 5,000 pounds, and may be unloaded with mechanical equipment with a minimum of labor. Scrap metal should be baled and, if possible, into tight bales, or shipped in containers to facilitate easy handling. Proper packing and grading will encourage the mills to use your product. The thought that briquetting is the answer to the packing problem does not meet with our approval.

We, and no doubt others, have encountered many difficulties using briquetted scrap, even though we know that the dealer has made an honest effort to put up a good package. Most production men in the mills want to prepare their own material so that if trouble is encountered they can hold their own organization responsible, and correction can be made.

Without quoting boresome figures, we find that the importation of brass mill products is hurting our industry, and subsequently hurting yours. Large quantities of scrap generated from these foreign products must be consumed by the mills, thereby decreasing the demand for your scrap. We ask that you give this problem serious consideration.

Mill Industry Outlook

What is the outlook for the mill industry? The unsettled markets and the recent declines have promoted fear in the minds of the buyers. Their reluctance to purchase their normal requirements has caused a slow-down in the mill industry. On the bright side of the picture, we find inventories low in consumer's hands, and purchasing in good quantity must come soon. We hope for a stable copper price. Actually, to the dealer industry, they should be pleased with the present price level. Less capital is required to operate your business. There is less chance of an inventory loss. Weight and grading differences are less important. The present price of copper will encourage more copper and brass business throughout the whole industry. Loss of business to substitutes has been an important factor, but we now feel that we are competitive again.

Address at 44th Annual Convention of National Association of Waste Material Dealers, Chicago, Ill., March 12, 1957.

Your Best Market This Week For

MIXED ALUMINUM CLIPPINGS

Aluminum Smelting & Refining Co., Inc.

5463 DUNHAM ROAD BEDFORD, OHIO

Tel. Cleveland: MONTROSE 2-3100

STEADIER TONE CHARACTERIZES COPPER MARKET IN U. K.; EXPECT PRICES TO STABILIZE AT 30c LEVEL

Tin Quotations Decline but Spot Supply Not as Easy as Anticipated; Hope for Improved Lead Demand in March; World Zinc Use Is Lagging

March 7, 1957

By L. H. TARRING
London, England

ALTHOUGH THE pace had slowed down considerably, the trend of copper prices during February was again downwards but in the latter part of the month a much steadier tone characterized the market.

This was almost certainly due to the fact that prices fell to around £240 a ton (30 cents per pound), which for quite a long time many people had regarded as a probable turning point in the long downward drift of the price of this metal. Not only have some of the leading Rhodesian producers given a certain amount of publicity to this price as one below which they would not be happy to see copper prices go for long, but it is believed that a number of Government support contracts come into operation at this level in the U. S. A.; and thirdly at this figure not many people in present circumstances are disposed to open short accounts on the copper market.

The market was taken a little by surprise, however, when the Rhodesian Selection Trust dropped its price by £10 to £240 on February 19, as this brought it several pounds a ton below the previous day's London Metal Exchange quotation, and it looked very much as if this important group was inclined to try and shorten the agony of the gradual downward drift (during most of which it had found itself above open market prices) by boldly reducing its figure to a level at which it was hoped stability might be achieved.

The fact that U. S. domestic producers have not yet brought their quotation down to this level naturally leaves room for conjecture as to whether they intend to try and hold quotations at 32 cents, but the general opinion on this side of the Atlantic is that they will have to come down to 30 cents sooner or later.

Expectation of Stability

Expectations of stability at the 30 cent level are based on the assumption that something will be done to restore equilibrium between production and consumption, partly perhaps by American Government support contracts, partly by U. S. barter acquisitions of foreign copper, and partly by a curtailment in American domestic output. The second and third of these are purely conjectural at the moment, but there is certainly not much indication that producers in the other main centers are inclined to cut back production yet, despite the fact that it is fairly generally acknowledged world output is running substantially in excess of present and prospective consumption in 1957.

With some improvement in the motor car industry in this country, and with wire makers still very busy — though not, perhaps, operating at their 1957 peak levels — a little more consumer interest has been shown recently. Open market demand has not been very impressive, however, on either side of the Atlantic. On the continent of Europe as well as in the U. K. buyers are moving cautiously until a clearer view of the price outlook is obtainable.

With prospects now a good deal brighter for an easing in oil supplies to Europe, the general industrial outlook is improved in that particular; but with confidence in the American boom a little less marked than it was a few months ago, and the various problems affecting the U. K. and Continental countries, most people are still inclined to the view that 1957 will not be quite as good a year as regards copper consumption as was its predecessor. Worries about undue substitution of aluminum for copper seem to be pretty well over for the time being, although if, as is currently rumored, aluminum prices are to be marked down soon, undue complacency in this respect may not be very wise.

Spot Tin Supply Position

The tin market has not been a very easy one to read just lately. On balance prices during February dropped quite appreciably, with some narrowing in the backwardation, but the spot supply position over here did not ease to the extent that had been anticipated.

A contributory factor, of course, is that the strike at the Penang plant of the Straits Trading Company has not yet been settled, and as a result Straits shipments in February were definitely on the small side, despite the diversion of as much material as possible to the company's Singapore plant. The other factor seems to be that it has taken rather longer than some people had anticipated for open market supplies of tin to reflect the additional supplies of concentrates now coming to Europe for treatment which were formerly taken by the Texas City smelter. This factor will obviously have its effect sooner or later — just how soon is impossible to predict. Meanwhile an early resumption of shipping through the Suez Canal would help the supply position.

Tin Council Meeting

A good deal of interest is developing regarding the next meeting of the International Tin Council in London

RST PRICE CHANGES

Changes in the Rhodesian Selection Trust's fixed electrolytic copper price, since it was established on May 9, 1955, and applicable to the RST's regular customers in the U. K. follow:

Date of Change	Pounds Sterling (Long Ton)	Equivalent in Cents Per Pound
1955		
May 9	280	35.00
August 2	325	40.625
September 5	360	45.00
1956		
February 27	385	48.125
April 30	350	43 75
May 28	320	40.00
June 18	300	37.50
July 2	275	34.375
August 1	300	37.50
October 15	280	35.00
October 24	265	33.125
November 12	280	35.00
December 17	270	33.75
1957		
February 1	250	31.25
February 19	240	30.00

U. K. COPPER STATISTICS

The British Bureau of Non-Ferrous Metal Statistics reports U. K. stocks of copper at the end of 1956 at 14,096 tons of blister and 45,518 tons of refined. Of the latter figure consumers held 25,861 tons. These figures compare with 14,670 tons, 41,168 tons and 26,509 tons respectively a month earlier. Home production in December was 8,191 tons of primary refined, 7,683 tons of secondary refined and 631 tons of secondary blister. Consumption of copper in December was 47,364 tons, bringing the year's total to 639,479 tons, or about 20,000 tons less than in 1955. Details of consumption are given below.

Gross weight of output	Dec. 1956	—Jan.-Dec.— 1955	1956
Unalloyed Copper Products			
Wire	19,964	238,728	250,332
Rods, bars and sections	1,244	19,155	18,909
Sheet, strip and plate	4,256	63,184	57,634
Tubes	3,813	50,059	53,492
Castings and misc.	650	6,450	7,800
	Dec. 1956	—Jan.-Dec.— 1955	1956
Alloyed Copper Products			
Wire	1,240	18,962	17,493
Rods, bars and sections	7,762	149,888	122,152
Sheet, strip and plate	7,164	138,562	110,119
Tubes	1,591	22,153	22,199
Castings and misc.	6,001	72,072	77,055
Copper sulphate	4,068	41,039	50,064
Total all products	57,753	820,252	787,249
Copper content of output	47,364	659,529	639,479
Consumption of refined copper	38,505	496,467	500,794
Consumption of copper and alloy scrap (Cu. content)	8,859	163,062	138,685

AVERAGE BRITISH PRICES FOR COPPER, TIN, LEAD, ZINC

(Per Long Ton)

Mean of Bid and Asked Cash Quotation at Close of Morning Session on London Metal Exchange

	COPPER			TIN			LEAD		ZINC	
	Cash	3 Months	Settlement	Cash	3 Months	Settlement	Current Month	3rd Following	Current Month	3rd Following
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1954 Averages	248 17 11	239 17 7	249 0 11	719 8 11	709 17 7	720 6 7	98 8 12	94 7 4	78 5 4	77 16 11
1955 Averages	351 14 11	341 0 3	352 5 6	740 2 12	736 12 11	740 12 8	105 17 3	105 9 6	90 13 4	89 12 3
1956 Averages	328 14 5	324 13 1	329 1 8	787 14 9	774 7 7	788 13 3	116 6 5	114 8 9	97 14 3	95 3 7
1957										
January	265 17 11	264 14 4	266 3 2	789 3 2	771 10 5	789 16 4	116 5 1	114 10 8	103 5 1	98 13 8
February	245 11 2	244 2 0	245 16 3	770 16 9	752 9 6	771 8 6	113 3 0	112 6 11	99 8 11	96 17 0

on March 20, as it is expected that at this meeting something will be done to alter the price levels laid down in the International Tin Agreement. Producers, under the leadership of Bolivia and Indonesia, are pressing for higher price ranges on the grounds that production costs have materially increased since the Agreement was approved in 1953.

There is some doubt as to whether the consumer members of the Agreement will be agreeable to the upper limit being raised, even if they have no undue objections to some advance in the floor level. For the time being it is the floor figure which is of most interest to the market, as any substantial increase in this might bring it to a figure at which purchases by the Buffer Stock on the open market might become admissible.

Lead Uninteresting

On the whole the lead market has been rather uninteresting in recent weeks. There was a slight tendency for Metal Exchange prices to sag during February, but the movement was not a large one, and the market here was obviously still benefitting from the effect of American Government purchases, which in broad terms have stabilized the price level of this metal.

Consumer demand in America is keeping on a fairly even keel, although in the U. K. it was affected to some extent by the depression in the motor car industry and petrol rationing. With the outlook in regard to both these points rather brighter now than it has been for some little time, it is hoped that there will be some improvement in demand. However, during March, of course, disposals of lead from Government holdings in this country will begin, and whilst it is expected that these will have the effect of causing shipments to the U. K. from supplying countries to be diverted elsewhere, it, nevertheless, adds modestly to the total available supplies.

It looks as if the building industry in this country may be somewhat less active in 1957 than in 1956, but it is doubtful whether this will have any significant effect on the demand for lead products in that field.

U. K. LEAD STATISTICS

There was an appreciable increase in U. K. stocks of lead in December, the end month figures being 26,920 tons of imported virgin and 12,500 tons of English refined (20,612 tons and 11,413 tons respectively at the end of November) according to figures just released by the British Bureau of Non-Ferrous Metal Statisitcs. Output of English refined lead in December was 6,680 tons, making for the year 94,477 tons, compared with 82,912 tons in 1955. Consumption was moderately lower on the year as detailed below.

	Dec. 1956	—Jan.-Dec.— 1955	1956
Cables	8,781	109,090	110,197
Batteries — as metal	2,221	32,006	27,717
Battery oxides	1,591	28,762	25,239
Tetraethyl lead	1,700	21,770	21,149
Other oxides and compounds	1,529	28,243	25,581
White lead	674	11,464	10,104
Shot	304	4,699	4,445
Sheet and pipe	4,894	78,843	74,018
Foil and collapsible tubes	354	5,217	4,970
Other rolled and extruded	536	8,360	7,692
Solder	1,092	13,408	13,734
Alloys	1,341	15,768	17,071
Miscellaneous	946	13,164	12,256
Total consumption	25,963	370,794	354,173
Of which:			
Imported virgin	12,663	212,074	172,363
English refined	5,176	68,472	82,938
Scrap, including remelted	8,124	90,248	98,872

U. K. TIN STATISTICS

Stocks of tin in the U. K. declined during December, reports the British Bureau of Non-Ferrous Metal Statistics, being 3,175 tons at the end of the year, compared with 3,436 tons at the end of November. Consumers' holdings, however, rose slightly on the month from 1,485 tons to 1,516 tons. Output in the U. K. in December was 2,128 tons of primary tin, making for the year 26,434 tons, against 27,241 tons in 1955. Consumption was only marginally lower on the year as indicated in the following details:

	Dec. 1956	—Jan.-Dec.— 1955	1956
Tinplate	814	9,847	10,100
Tinning			
Copper wire	39	527	484
Steel wire	6	112	100
Other	58	802	831
Solder	103	2,877	2,765
Alloys			
White metal	246	3,741	3,151
Bronze and gunmetal	175	2,508	2,721
Other	28	479	449
Wrought Tin			
Foil and sheets	19	338	290
Collapsible tubes	22	422	341
Pipes, wire and capsules	4	50	48
Chemicals	82	1,033	1,048
Other uses	7	137	120
Total all trades	1,667	22,873	22,448

Despite the undoubted influence of America's domestic stockpiling program and barter deals in foreign zinc on the general price structure of the metal, quotations in February on the London market declined rather more than some people had anticipated.

However, it looks as if they have now lost as much ground as they are likely to, so long as U. S. barter transactions are open to European producers more or less on the basis of the American domestic quotation. It is quite obvious that world consumption of zinc is lagging behind global production, and without this influential American support, the price level would be very vulnerable.

There is certainly no lack of zinc concentrate supplies: indeed there is a tendency at the moment for there to be something of a surplus of these, despite some quite substantial Japanese purchases in recent weeks.

Towards the end of February a meeting of European zinc producers was held in London at the instigation of the Zinc Development Association. This opportunity was taken for a general discussion on the outlook for the metal, to some extent in connection with possibilities arising from the proposed European Common Market, and free trade area. So far as is known, no particular decisions of importance were arrived at, but it is believed that producers formed the intention of holding further meetings for the discussion of problems of mutual interest.

Automotive Industry

In the last two or three weeks activity in the motor car industry here has improved, which should help demand for zinc via the brass industry, and also in the form of zinc alloy diecastings.

The scarcity of g.o.b. metal in the U. K. has become rather less marked as more Continental metal was offered here for a time, but just recently surplus European zinc seems to have been finding an outlet in barter deals and an appreciable backwardation still persists in London Metal Exchange prices.

U. K. ZINC STATISTICS

U. K. stocks of zinc declined somewhat in December from 46,364 tons at the end of November to 44,816 tons at the end of last year, reports the British Bureau of Non-Ferrous Metal Statistics. Of the total consumers held 18,533 (19,889 tons at the end of November). U. K. production in December was 7,303 tons of virgin zinc. Consumption declined during 1956 compared with 1955 as the following detailed figures show:

	Dec. 1956	—Jan.-Dec.— 1955	1956
Brass	6,774	121,598	102,475
Galvanizing	7,735	107,535	105,187
of which: General	2,634	34,743	34,579
Sheet	2,548	33,566	32,186
Wire	1,523	22,306	20,508
Tubes	1,030	16,920	17,914
Rolled zinc	1,743	23,067	23,433
Zinc oxide	2,264	29,926	26,893
Diecasting and forming alloy	3,538	41,452	35,574
Zinc dust	1,076	10,998	10,234
Miscellaneous	1,004	12,021	11,915
Total all trades	24,134	346,597	315,711
Of which: Slab zinc	17,891	251,359	226,434
Remelted zinc	383	5,778	5,510
Brass and other copper alloy (Zn content)	2,786	52,649	47,294
Scrap z'nc metal, alloy, residues, etc. (Zn content)	3,074	36,820	36,473

United States Duties on Principal Ore and Metal Imports

(Including Revisions in Effect June 30, 1956, Under Geneva Agreements)

(Quantities Are in Pounds Unless Otherwise Stated; n.s.p.f. Stands for "Not Specially Provided For.")

COPPER

NOTE — The excise tax of 4c a pound on copper (which was reduced to 2c a pound by the Geneva Trade Agreement) was suspended in April, 1947, until March 31, 1949, and on expiration it was further suspended until June 30, 1950. The tax was reimposed on July 1, 1950. It was suspended again on May 22, 1951, retroactive to April 1, 1951, and until February 15, 1953, and again until June 30, 1954. Suspension further extended to June 30, 1955, and again until June 30, 1958. If import tax is restored, the 1956 Geneva Agreement provides for 5% reductions effective on June 30 of 1956, 1957 and 1958, provided the price is above 24c; if the price is below 24c the 2c tax would prevail.

Copper ore and concentrates, usable as flux, etc., copper content	free
Copper ore and concentrates, product of Cuba and Philippines, copper content	free
Copper ore and concentrates, copper content	free
Regulus, black, or coarse copper, and cement copper, copper content	free
Unrefined black, blister, and converter copper in pigs or converter bars, copper content	free
Refined copper in ingots, plates or bars, copper content	free
Copper rolls, rods or sheets	1¼c lb.
Copper seamless tubes and tubing	3½c lb.
Copper plain wire	12½%
Copper brazed tubes†	5¼c lb.
Old and scrap copper, fit only for remanufacture; and scale and clippings, copper content	free

BRASS

Brass rods, sheets, plates, bars, strips, Muntz or yellow metal sheets, sheathing, bolts, piston rods, shafting and bronze rods, tubes and sheets	2c lb.
Brass tubes and tubing, seamless	2c lb.
Brass tubes, brazed, angles and channels	6c lb.
Brass and bronze wire	12½%

LEAD

NOTE — Import duties on lead-bearing ores, flue dust, and mattes of all kinds, lead bullion or base bullion, lead in pigs and bars, lead dross, reclaimed lead and antimonial lead were suspended February 12, 1952, and reimposed on June 26, 1952. Lead scrap duty was reimposed July 1, 1952.

Lead-bearing ores and mattes, n. s. p. f., lead content	¾c lb.
Bullion or base bullion, lead content	1 1/16c lb.
Pigs and bars, lead content	1 1/16c lb.
Reclaimed, scrap, dross, lead content	1 1/16c lb.
Babbitt metal and solder, lead content	1 1/16c lb.
Pipe, sheets, shot, glaziers' lead, and wire	1 5/16c lb.
Type metal and antimonial lead, lead content	1 1/16c lb.
White lead	1.05c lb.
Litharge	1¼c lb.
Red lead	15/16c lb.
Orange mineral	1c lb.

ZINC

NOTE — Import duties on zinc-bearing ores, and on zinc in blocks, pigs and slabs were suspended February 12, 1952, and reimposed on July 24, 1952. Tax on old zinc and dross and skimmings reimposed July 1, 1953.

Zinc-bearing ores, except pyrites containing not more than 3% zinc, zinc content	6/10c lb.
Zinc contained in zinc-bearing ores, n. e. s., not recoverable, zinc content	6/10c lb.
Zinc, old and worn out, fit only for remanufacture	¾c lb.
Dross and skimmings	¾c lb.
Zinc in blocks, pigs or slabs	7/10c lb.
Zinc in sheets	1c lb.
Zinc sheets, plated with nickel or other base metal, or solutions	1⅛c lb.
Zinc dust	7/10c lb
Zinc die-casting alloys	12½%
Zinc oxide and leaded zinc oxides containing not more than 25% lead, dry	3/5c lb.
ground in or mixed with oil or water	1c lb.

MISCELLANEOUS METALS AND ORES

Aluminum, metal and alloys, crude, except alloys elsewhere provided for†	1.40c lb
Aluminum scrap	free
Aluminum plates, sheets, bars, rods, circles, squares, etc.†	2.80c lb.
Antimony ore, antimony content	free
Antimony metal and regulus	2c lb
Antimony needle or liquidated	¼c lb
Antimony oxide	1c lb
Antimony sulphides	½c lb. & 12½%
Arsenic, metallic†	2.80c lb
Arsenious acid or white arsenic	free
Bauxite, crude*	free
Bauxite, refined**	¼c lb
Bismuth	1⅞%
Bismuth salts and compounds	35%
Beryllium metal and compounds†	23½%
Beryllium ore	free
Cadmium	3¾c lb.
Cadmium flue dust, cadmium content	free
Chrome ore or chromite	free
Chrome or chromium metal†	11½%
Cobalt metal	free
Cobalt ore and concentrates, cobalt content	free
Magnesium, metallic†	17.20c lb.
Magnesium alloys, powder, sheets, wire†	19c lb. & 9½%
Magnesium scrap	free
Manganese ores, containing over 10% manganese, manganese content	¼c lb., except Cuba, free
Molybdenum ore or concentrates, molybdenum content†	33c lb.
Nickel ore, matte and oxide	free
Nickel and alloys, nickel chief value, n. s. p. f., in pigs, ingots, shot, cubes, grains, cathodes, or similar forms	1¼c lb.
Nickel, bars, rods, plates, sheets, castings, strips, wire or electrodes	12½%
Nickel scrap	free
Nickel tubes, tubing (if cold rolled, drawn or worked — 2½% extra)	6¼%
Platinum, grain, nuggets, sponge and scrap, oz. troy	free
Platinum in ingots, bars, sheets, or plates, not less than ⅛ in. thick, oz. troy	free
Platinum, ores, platinum content, oz. troy	free
Quicksilver or mercury	25c lb.
Selenium and salts	free
Tantalum	12½%
Tin ore, cassiterite, and black oxide of tin, tin content	free
Tin in bars, blocks, pigs, grain, granulated, and scrap, and alloys, chief value tin, n. s. p. f.	free
Tungsten ore or concentrates, tungsten content	50c lb.

***Crude bauxite import duty suspended to July 15, 1958. **Under Public Law 25 alumina imported for use in aluminum production is free for entries from July 17, 1956 to July 16, 1958. †Tariff to be reduced 5% on June 30, 1957 and 5% on June 30, 1958, under Geneva Agreement which expires on June 30, 1959.**

DOMESTIC COPPER SUPPLIES MORE THAN ADEQUATE; PRODUCERS AT 32c POUND, CUSTOM SMELTERS 31c

Lead, Zinc Demand Moderate With Stockpile Buying Tapering Off; Spot Tin Easier; Extruded Aluminum Prices Reduced; Platinum Cut $6 Ounce

March 7, 1957

COPPER copped most of the headlines in the metal market during the month in review. Unfortunately, the news about the red metal was not particularly bullish. Supplies of copper were more than adequate. By February 19, all primary producers were at 32.00c a pound delivered for electro, with custom smelter electro on Februray 20 down another 1.00c a pound to 31.00c.

The same old story prevailed for lead and zinc, demand for the metals being moderate and Government long-term stockpile purchases continuing to lend support to these markets. Prices were unchanged at 16.00c a pound New York for lead and 13.50c East St. Louis for Prime Western zinc.

Spot tin, following settlement of the dockworkers' strike, again became ample but little prompt tin was available at this writing. Spot tin was quoted at 99.25c a pound New York on March 6, with prompt metal at 99.00c.

The easier demand situation for extruded aluminum shapes resulted in prices being reduced 5 to 6 per cent; primary aluminum prices were firmly maintained. Silver continued to hold at 91.375c an ounce, with quicksilver unchanged at $255-$257 per flask. Leading platinum refiners cut their prices for the precious metal $6 an ounce, to $92-$95, on March 1.

Copper Demand Light

Although the large primary producers at this writng had opened their books for April shipment orders, there was no rush on the part of their regular customers to make known their requirements. Generally, on an active market, producers usually are made aware by the tenth of each month what their customers' needs will be for the following month. Under present market conditions, however, with the copper supply more than adequate, some buyers were awaiting until the middle of the month or even later before notifying their suppliers how much metal they planned to take the following month.

As a matter of fact, consumers at this time were still placing orders for March shipment, indicating that they had underestimated their needs.

Producers maintained their 32.00c a pound delivered quotation for electro and custom smelters reported small-quantity sales at their 31.00c level. Although dealers in the outside market were willing to shade the 31.00c level, they had no occasion to do so in the absence of any consumer interest.

Brass Mill Imports

The fabricating industry continued to complain of keen competition from imported copper and brass mill products. In the Valley there was agitation that action be taken to restrict the use of foreign-made brass tubing in the State of Connecticut. A measure which would do just that was being drafted by State Senator Peter R. Augelli.

Labor and industry representatives, however, assumed different positions on the pending State bill. A labor spokesman contended that the amount of foreign imports was "fractional," adding that the high price of copper was more to blame than imports for unemployment in the area.

P. D. COPPER OUTPUT CUT

Phelps Dodge Corp. announced March 14 it will revise its schedule of copper open pit mining and milling operations so that there will be 23 operating days instead of 24 in each four-week period. In November last year the operating schedules were reduced from 26 days out of 28 to 24 days out of 28. The additional cutback in output supplements the move to keep supply in balance with demand.

Ingot Prices Decline

Brass and bronze ingot prices were marked down again, by 0.50 to 1.50c a pound on February 19. On February 1 ingot prices had been cut 0.75c to 3.00c a pound. The only other change in ingot prices in 1957, on January 23, also was a reduction, of 1.00c to 3.00c.

Scrap Copper Exports

Further cognizance was taken by the Government of the easier supply situation for copper. On March 4 the U. S. Bureau of Foreign Commerce announced exports of scrap copper and brass had been open-ended for the balance of the first quarter and in the second quarter. (See Washington Report in this issue.)

Lead Buying Pattern

Lead consumers appeared to be following a set pattern in placing orders for the metal. During the second half of each month they begin placing orders for the ensuing month and then during the first half of the month they fill in the tonnages they still need. Orders currently placed were mainly for filling-in purposes; in other words, for shipment in the latter part of March.

Producers generally were of the opinion that the demand for the metal will pick up. They pointed out that they have received no requests from consumers to postpone shipments, indicating that consumers' stocks of the metal were very low.

The bulk of current business was placed at the spot price of 16.00c New York and 15.80c St. Louis.

Lead, Zinc for Stockpile

Purchases of lead and zinc by the General Services Administration for the Government's long-term stockpile have been tapering off, indicating funds for the current buying program were nearly expended. (See Washington Report in this issue.)

The February zinc statistics lent emphasis to the long-held conviction in the trade that the Government's monthly purchases of zinc for the stockpile have been the sustaining force behind the market's stability. Without such support it is doubtful whether the price could be held at 13.50c a pound for the Prime Western grade, East St. Louis.

The simple fact is that domestic output of slab zinc is running in excess of consumption by about 20,000 tons a month, and the stocks in producers' hands at the end of February would have been increased by about that tonnage had not the Government stepped in and taken about 11,000 tons off the market.

Following are the February statistics for all grades of zinc, in tons, with the January totals in parentheses: production, 87,974 (93,452); shipments to Government, 10,905 (15,377); shipments to domestic consumers, 67,675 (67,273); total shipments, 80,-107 (83,100); stocks at end of month, 86,841 (78,974); unfilled orders at end of month, 56,421 (42,922). February, being a shorter month, output for the period was down 5,478 tons from the January total. On a daily basis, however, the February output was 3,142 tons as against 3,014 tons in January.

While there has been no official statement on the subject, indications were that the Government's long-term objective of 300,000 tons of zinc for the stockpile was just about completed. Until such time as some other plan may be worked out, such as the application of barter deals for domestic zinc, the Government's purchases each month are expected to further decline.

Prompt Tin Scarce

A paradoxical situation has developed in the current New York tin market. The supply of spot Straits was ample but little prompt metal was available. The supply situation eased for spot tin with the ending of the dockworkers' strike on the East Coast. At this writing, however, only three vessels with tin cargoes (prompt metal) were due to dock before March 20.

Spot tin on March 6 was quoted at 99.25c a pound New York as against the last previously quoted price in this space of 102.50c for February 14, which was the high for the February 14-March 6 period. The low was the 98.25c for February 28.

Last year's world production of tin-in-concentrates (including China but excluding Russia) totaled 174,500 tons, a decline of 2,500 tons from 1955, according to the International Tin Study Group. World tin metal output

(Continued on Page 16)

U. S. Metal Market Review

(Continued from Page 15)

last year was 177,000 tons as against 178,500 tons in 1955.

Aluminum Extrusions

The easier demand situation for extruded aluminum shapes was reflected by price reductions averaging five to 6 per cent by Aluminum Company of America, Reynolds Metals Company and Revere Copper and Brass Incorporated. The last named company made the initial reductions, effective February 20, and the two other companies quickly announced similar action.

Further evidence of the easier supply for aluminum was Government action concerning scrap aluminum exports (see Washington Report in this issue) and the offer of two primary producers to deliver aluminum to the Government stockpile.

General Services Administration announced it would issue shipping regulations to Reynolds Metals Co. for 15,000 tons of primary aluminum offered to the Government under put rights provided in three expansion programs. GSA said the metal was being offered from this year's output from facilities built with Government aid during the Korean hostilities. GSA also said the same provisions would apply to Kaiser Aluminum & Chemical's offer of two lots of primary metal, totaling 25,000 tons, tendered for first quarter delivery.

The 27.10c a pound price, f.o.b., was maintained for the 30-pound, 99 per cent plus primary aluminum ingot. Secondary aluminum ingots displayed a bit more strength and scrap aluminum prices also tended firmer.

Platinum Reduced

Baker & Co. and Johnson Matthey & Co., leading platinum refiners, on March 1 cut their prices for the precious metal $6 an ounce, to $92 in wholesale quantities and to $95 for retail lots. The previous refinery range had been $98 to $101 an ounce, with dealers doing business at as low as $96. Dealers in the outside market followed the refiners' reduction and generally quoted the metal at $92 to $95. It was indicated dealer business might be done at $91. The reductions were attributed to increased supplies of the metal and reported offerings of platinum in Europe from Russian sources. At the same time, domestic demand was slow.

Quicksilver Unchanged

Although consumer demand was light, quicksilver was unchanged at $255 to $257 per flask of 76 pounds. This range was established on November 14.

Brass Ingot Trade Faces Substitution Problem

(Continued from Page 10)

processes will insure additional and corroborated physical qualities that the design engineer will be forced to recognize and against which he cannot afford to substitute.

My belief is that the substitution cycle, which gained its real momentum beginning about 15 years ago, through war dictated restrictive policies, was viewed with some dismay by the designers of metal products. Consider that the beauty, long life, and excellent corrosive resistive qualities of a brass and bronze casting had been so well established and you will realize that the substitution was forced, not welcomed. One of the factors forcing the change was the tremendously increased production facilities in the metal working industries, which demanded the top speed completion of their products regardless of quality and often only requiring a sufficient supply of parts. Some brass castings were replaced knowingly with a part which was so inferior as to shorten the life of a finished article below the customer expectancy. In other words, make the product expendable.

Swing to Quality

My hope is that the buying public will swing full circle and will again insist on quality in the makeup of their purchases, thus making desirable the long life of a brass or bronze casting. This revolution in buying, together with entirely reliable chemical and physical properties of brass and bronze castings, will rearm the product designers with new ammunition.

Even so, the problem is becoming acute and to effect the change we'll need help. It won't come easy, nor will it be spectacularly sudden. It will be certain only with the cooperation of everyone in the industry who is concerned as are many of you.

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Daily Metal Quotations in February, 1957

The following quotations are taken from the Daily Metal Reporter
(In Cents Per Pound)

FEBRUARY	Copper					Tin — Straits New York		Lead		Zinc					Aluminum	Antimony	Silver
	Producers' Price Del. Conn.	Custom Smelters' or Outside Price	Electro f. o. b. Refinery	Lake Del.	Average Electrolytic Export Price F.a.s. N. Y.	Spot	Prompt	New York	Outside St. Louis	Prime West. f. o. b. E. St. Louis	Prime West. Del. N. Y.	Brass Spec. f. o. b. E. St. Louis	High Grade Delivered	Spec. High Grade Delivered	30-Lb. Ingot 99% Plus (f. o. b.)	Domestic Spot 99.5% f.o.b. Laredo	(Cents Per Ounce) New York
1	35.00	34.00	34.60	34.00	32.50	102.75	102.625	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
2	35.00	34.00	34.60	34.00	32.50	.....	.....	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	.....
4	34.00	34.00	33.60	34.00	32.50	102.375	102.00	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
5	34.00	34.00	33.60	34.00	32.50	103.00	102.625	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
6	34.00	33.00	33.10	34.00	32.125	102.50	102.00	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
7	34.00	33.00	33.10	34.00	31.50	102.75	102.25	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
8	34.00	33.00	33.10	34.00	31.50	103.00	102.00	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
9	34.00	33.00	33.10	34.00	31.50	.....	.....	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	.....
11	34.00	33.00	33.10	34.00	31.50	103.00	101.00	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
13	34.00	32.00	32.60	34.00	31.50	103.00	100.625	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
14	34.00	32.00	32.60	34.00	31.00	102.50	100.25	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
15	34.00	32.00	32.60	34.00	31.00	101.75	99.875	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
16	34.00	32.00	32.60	34.00	31.00	.....	.....	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	.....
18	33.00	32.00	32.60	32.00	31.00	101.00	99.75	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
19	32.00	32.00	31.60	32.00	31.00	100.25	99.50	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
20	32.00	31.00	31.10	32.00	30.125	100.00	99.25	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
21	32.00	31.00	31.10	32.00	30.125	99.00	98.75	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
23	32.00	31.00	31.10	32.00	30.125	.....	.....	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	.....
25	32.00	31.00	31.10	32.00	30.125	98.50	98.125	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
26	32.00	31.00	31.10	32.00	30.125	98.50	98.125	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
27	32.00	31.00	31.10	32.00	30.125	98.25	97.875	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
28	32.00	31.00	31.10	32.00	30.375	98.25	98.00	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	91.375
AV.	**33.318**	**32.273**	**32.464**	**33.182**	**31.17**	**101.132**	**100.257**	**16.00**	**15.80**	**13.50**	**14.00**	**13.75**	**14.85**	**15.25**	**27.10**	**33.00**	**91.375**
HI.	**36.00**	**34.00**	**35.60**	**34.00**	**32.50**	**103.00**	**102.625**	**16.00**	**15.80**	**13.50**	**14.00**	**13.75**	**14.85**	**15.25**	**27.10**	**33.00**	**91.375**
LO.	**32.00**	**31.00**	**30.60**	**32.00**	**30.00**	**98.25**	**97.875**	**16.00**	**15.80**	**13.50**	**14.00**	**13.75**	**14.85**	**15.25**	**27.10**	**33.00**	**91.375**

Nuclear Age Needs Metals With Special Properties

(Continued from Page 9)

that thousands of tons of stainless will be used in nuclear power plants during the next 10 years.

All in all, it seems reasonably conservative to envision a 100 per cent increase in demand for stainless by 1965 over 1956.

Nuclear Developments

Trends in the process and chemical industries toward higher temperatures and more corrosive conditions will result in substantial increases for both high temperature and nonferrous alloys. Developments in nuclear power will also require substantial tonnages. Again, it seems reasonable to assume that present requirements could double by 1965 if supplies are made available.

In late 1956, steel mills were paying $1.75 to $2.75 for nickel contained in scrap. Nickel platers were paying $3.00 to $3.50 for anodes. Nickel requirements in electroplating have been met in the past few years by purchase of imported premium price nickel anodes at prices in some cases several times the market price. These supplies, originating generally from New Caledonia ores, have entered the country from French, Japanese, and West German sources. Assuming readily available supplies of nickel, requirements could easily double by 1965.

Requirements for primary nickel in low-alloy steels have been relatively constant during the past several years. Shortages of nickel have led to considerable impetus to design away from its use, particularly in low-alloy steels. However, given the assurance of adequate supplies, use of nickel in low-alloy steels supplies, should expand at a somewhat faster rate than the economy.

Summarizing nickel, assuming a continuing need for defense equipment, the demand for primary nickel may well be in the range of 450 to 550 million pounds (225,000 to 275,00 tons) annually by 1965, if assured supplies can be foreseen.

Cobalt

Cobalt is produced as a by-product associated with the recovery of other metals, principally copper. As such, the available supply is a function of the demand for other metals. Until and unless new deposits are located or technologies developed to recover cobalt at lower cost, there can be little flexibility in production to meet fluctuations in demand.

Growth has been substantial but sporadic. Between 1943 and 1949, consumption was relatively constant at about 4.5 million pounds. This jumped to 8.3 million pounds in 1950, and reached 10.8 million pounds in 1952, but has since declined to 9.7 million pounds in 1955. Cobalt productive capacity world wide is considerably above civilian demand and with our stockpiling goal for cobalt near completion, the price of cobalt has been reduced from $2.60 to $2.00 per pound by Africa Metals Company, American sales outlet for Union Miniere du Haut Katanga (the world's principal producer) in an effort to stimulate more interest.

Principal Usage

Principal metallic uses for cobalt fall in two categories: (1) high-temperature alloys, and (2) permanent magnets. The principal use for the cobalt base "super-alloys" has been in aircraft jet engines, particularly for turbine blades and components of the afterburner. Because of the limited availability of cobalt there has been a deliberate attempt to design away from its use. Although cobalt is generally considered superior to nickel in high-temperature applications, substantial increases in operating temperatures await the development of completely new alloys of other materials. Excluding consideration of such long-range possibilities, applications subject to large wartime increases must still be restricted. However, considerable research is under way to uncover new alloys and applications, and there is every reason to believe that peacetime uses for cobalt in high-temperature applications will be expanded considerably taking up most of the slack between peacetime needs and productive capacity.

The development of television has had a tremendous effect on magnet consumption in the United States. Color television, when it takes hold will provide an increased demand. The rapid expansion in coin-operated vending machines has provided another growth market for cobalt. Other growing uses may be envisioned as the network of radar and other searching defense devices is developed. Assuming availability of cobalt

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at reasonable prices this should continue to be a growth area.

By 1965, it is reasonable to assume that civilian markets can be developed that would double present consumption rates, if continuing supplies of cobalt are deemed adequate. Should possible production rates of cobalt be increased manifold, applications for cobalt not deemed feasible under present conditions would be developed rapidly.

Magnesium

The possibilities of a glowing future for magnesium have been pointed out many, many times. As the lightest of the structual metals in common use, it holds considerable interest in a variety of applications where weight becomes a major consideration. Growth of these structural uses, however, is contingent upon the development of improved alloys and fabrication qualities. The virtually limitless supply of raw materials kindles the desire to find real tonnage applications of economic realization.

Civilian consumption of magnesium has resumed its upward trend, reaching 46,000 tons primary and 9,500 tons secondary metal in 1955. Dow Chemical Company in a recent publication has estimated that structural uses accounted for about 39 per cent of the total consumption. Of these, aircraft and missiles accounted for 10,000 tons, or close to 50 per cent. The application of magnesium as a reducing agent in making titanium and zirconium metal has become significant in the last three years. However, present trends seem to favor the use of sodium. Though capacities of some present producers using magnesium reduction will probably be expanded, a number may be expected to recover their own magnesium, representing a captive use.

1975 Production Level

In 1952, the President's Material Policy Commission pointed out both the problems and possibilities of magnesium, and the conclusion was drawn that production by 1975 might be anywhere from 100,000 to 1,000,000 tons depending on the technologic progress made. At the Magnesium Association Meeting in October, 1955, Leland I. Doan, president of Dow Chemical Company, reviewed the outlook for magnesium and predicted that civilian demand approach productive capacity then in operation within a few years. The fact that a truly mass production item could use up most of this excess was stressed. For example, magnesium luggage consumed almost 1,000 tons of sheet and extrusion last year.

It seems reasonable to assume that civilian consumption should reach the 100,000 ton mark by 1965 or so, and with the continuing development of new high-temperature alloys and improved machinability many significant new applications should be forthcoming.

Summary

In summary, the demands of our nuclear age will call for ever-increasing quantities of new and improved materials. In addition to the metals discussed, active exploration is going on in many areas in searching for ways to control and utilize the new forces that are at hand. Time limitations prevent a discussion of others of growing interest and importance such as boron, lithium, chromium, columbium, and the rare earths. Suffice it to say, there is an expanding need for a variety of metals having special properties and applications. If we are to maintain our leadership in the world's affairs it is vital not only to expand our use of the world's metals but also to achieve new levels of quality and economy in each minerals applications. You, as secondary metal producers, provide a vital link in true conservative utilization of our basic minerals and must adopt an increasingly important role if efficient, economic, and low-cost use of these metals is to be realized.

Washington Report

(Continued from Page 5)

in the cold. The Administration, however, is expected to extend the barter program so that it can continue purchases of domestic lead and zinc.

Mineral Subsidies

The possibility that the Administration might extend the barter program to include purchases of domestic lead and zinc, rather than go to Congress for more money, was pointed up in recent House actions. The House on February 26 passed and sent to the Senate its appropriation committee's proposal for a 12 per cent cut in the $515,200,000 budget request for the Interior Department for the next fiscal year beginning July 1. About $40,000,000, or two-thirds of the $61,000,000 reduction, would be made by slashing all funds to continue the Government minerals purchase program.

Some Goals Ended

Meanwhile, the Office of Defense Mobilization on February 28 announced the closing of expansion goals for chemical grade chromite, selenium, and battery and chemical grade manganese ore, terminating the use of the rapid tax amortization incentives in these areas.

In closing these goals, ODM officials pointed out that the fast tax writeoff has not been a suitable incentive to secure the desired expansion in these areas since no applications have been received for several years.

Aluminum Industry Probe

The Minerals and Raw Materials subcommittee of the House Small Business Committee plans an additional study of the problems of the small business concerns in the aluminum industry, according to Rep. Sidney R. Yates (Dem., Ill.), chairman of the subcommittee. Rep. Yates said that "the small and medium-sized manufacturers and processors are faca price squeeze on semi-fabricated and semi-finished products." He added:

"In view of the possible adverse effect of the stockpiling programs on the economic position of the small and medium-sized manufacturer and processor, a comprehensive study may be made by the committee of the stockpiling procedures, policies, regulations and goals." Rep. Yates said public hearings are scheduled for May, 1957.

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	Crude Production		Refined	Deliveries to	Refined Stock	Stock Increases or Decreases		
	Primary	Secondary	Production	Customers	End of Period	Blister	Refined	Total
1955 Total	2,613,662	133,065	2,728,309	2,744,391	221,331	+18,418	— 8,552	+11,112
1956								
Feb.	228,409	11,355	243,458	236,841	226,686	— 193	+ 9,371	+ 9,178
Mar.	243,676	14,293	258,462	261,814	225,827	— 493	— 359	— 1,352
Apr.	232,986	14,716	254,462	242,244	238,125	— 6,760	+12,298	+ 5,538
May	237,177	18,608	269,846	256,245	252,130	—14,061	+12,161	— 1,900
June	238,814	11,360	251,382	236,714	266,221	+ 1,309	+14,091	+15,130
July	233,182	11,174	240,633	198,800	303,225	+ 3,723	+37,004	+40,727
Aug.	241,295	10,605	242,614	224,546	315,572	+ 8,436	+12,347	+20,833
Sept.	221,401	8,126	217,522	219,479	309,351	+12,005	— 6,221	+ 5,784
Oct.	255,442	13,924	263,752	234,080	333,952	+ 5,614	+24,601	+30,215
Nov.	249,360	10,204	254,377	239,181	345,181	+ 5,187	+11,229	+16,416
Dec.	236,512	13,124	250,173	237,003	354,420	— 537	+ 9,239	+ 8,702
Total	2,862,839	152,536	2,987,060	2,830,407	354,420	+28,415	+133,089	+161,402
1957								
Jan.	240,790	15,514	256,729	263,014	344,972	— 245	— 9,448	— 9,693
Feb.	235,559	10,426	242,780	214,796	309,956	+ 3,205	+24,984	+28,189

In U. S. A.

1955 Total	1,036,702	124,760	1,467,448	1,446,354	61,554	.....	+14,446	.....
1956								
Feb.	89,326	11,697	127,917	139,383	47,053	.....	— 2,963	.....
Mar.	99,681	12,596	144,027	141,590	51,595	.....	+ 4,542	.....
Apr.	95,499	13,780	140,032	139,927	54,887	.....	+ 3,292	.....
May	101,422	17,475	145,740	142,961	56,208	.....	— 523	.....
June	98,496	12 471	136,713	131,299	60,671	.....	+ 4,463	.....
July	84,787	10,387	125,401	97,698	87,944	.....	+27,273	.....
Aug.	91,282	9,545	122,108	109,618	96,450	.....	+ 8,506	.....
Sept.	88,659	7,367	112,484	104,486	93,202	.....	— 3,248	.....
Oct.	95,109	12,621	136,379	113,353	106,120	.....	+12,918	.....
Nov.	90,573	8,940	132,970	114,524	116,516	.....	+10,396	.....
Dec.	92,231	12,352	129,839	99,594	120,645	.....	+ 4,129	.....
Total	1,133,134	139,584	1,580,287	1,465,899	120,645	.....	+50,091	.....
1957								
Jan.	94,783	14,683	139,150	119,925	118,564	.....	— 2,081	.....
Feb.	92,242	8,790	134,119	101,565	136,330	.....	+17,766	.....

Outside U. S. A.*

1955 Total	1,576,960	8,305	1,260,861	1,298,037	159,777	.....	—21,752	.....
1956								
Feb.	138,918	1,808	115,541	97,458	179,633	.....	+12,334	.....
Mar.	143,995	1,697	114,435	120,224	174,232	.....	— 5,401	.....
Apr.	137,487	936	114,430	102,317	183,238	.....	+ 9,006	.....
May	135,755	1,133	124,106	113,284	195,922	.....	+12,684	.....
June	140,318	1,136	114,669	105,415	205,550	.....	+ 9,628	.....
July	148,395	787	115,232	101,102	215,281	.....	+ 9,731	.....
Aug.	150,013	460	120,706	114,928	219,122	.....	+ 3,841	.....
Sept.	132,742	759	105 038	114,993	216,149	.....	— 2,973	.....
Oct.	160,333	1,303	127,373	120,727	227,832	.....	+11,683	.....
Nov.	158,787	1,264	121 407	124,657	228,665	.....	+ 833	.....
Dec.	144,281	772	120,334	137,409	233,775	.....	+ 5,110	.....
Total	1,729,705	12,952	1,406,773	1,364,508	233,775	.....	+73,998	.....
1957								
Jan.	146,097	831	117,579	143,089	226,408	.....	— 7,367	.....
Feb.	143,317	1,636	108,661	113,231	233,626	.....	+ 7,218	.....

* Excluding Russia, Yugoslavia, Norway, Sweden, Japan and Australia.

Electrolytic Copper

Producers' Price, Del. Valley
Monthly Average Prices
(Cents Per Pound)

	1954	1955	1956	1957
Jan.	29.88	30.24	43.00	36.00
Feb.	29.88	33.00	44.03	33.318
Mar.	29.93	33.222	46.00	....
Apr.	29.98	36.00	46.00	....
May	30.00	36.00	46.00	....
June	30.00	36.00	46.00	....
July	30.00	36.00	41.56	....
Aug.	30.00	37.81	40.00	....
Sept.	30.00	43.00	40.00	....
Oct.	30.00	43.00	39.308	....
Nov.	30.00	43.00	36.00	....
Dec.	30.00	43.00	36.00	....
Ave.	29.27	37.522	41.992	....

Electrolytic Copper

Custom Smelters' Price, Del. Valley
Monthly Average Prices
(Cents Per Pound)

	1954	1955	1956	1957
Jan.	29.75	30.48	50.22	34.87
Feb.	29.75	33.00	52.07	32.273
Mar.	29.866	33.667	53.11	....
Apr.	29.965	36.00	48.88	....
May	30.00	36.00	44.221	....
June	30.00	36.00	40.00	....
July	30.00	36.00	38.14	....
Aug.	30.00	40.14	39.32	....
Sept.	30.00	50.00	39.00	....
Oct.	30.00	45.99	37.192	....
Nov.	30.00	45.84	35.96	....
Dec.	30.00	49.42	35.45	....
Aver.	29.944	39.38	42.797	....

Lake Copper

Producers' Price Delivered
Monthly Average Prices
(Cents Per Pound)

	1954	1955	1956	1957
Jan.	30.00	30.12	43.00	36.00
Feb.	30.00	33.00	43.783	33.182
Mar.	30.00	33.56	46.00	....
Apr.	30.00	36.00	46.00	....
May	30.00	36.00	46.00	....
June	30.00	36.00	46.00	....
July	30.00	36.00	41.68	....
Aug.	30.00	37.46	40.00	....
Sept.	30.00	43.00	40.00	....
Oct.	30.00	43.00	39.321	....
Nov.	30.00	43.00	36.00	....
Dec.	30.00	43.00	36.00	....
Aver.	30.00	37.51	41.975	....

Fabricators' Copper Statistics

(In tons of 2,000 pounds)

	Fabricators' Stocks of Refined Cop.	Unfilled Purchases of Refined by Fab. from Producers	Fabricators' Working Stocks	Unfilled Sales by Fabricators to Customers	Actual Copper Consmd. by Fabricators	Excess Fabricators' Stocks Over Orders Bkd.
1951						
Total	280,402	32,147	295,385	303,050	1,392,111	—285,886
1952						
Total	333,455	32,652	292,157	275,312	1,389,451	—201,362
1953						
Total	380,881	25,022	309,664	170,917	1,375,869	— 74,678
1954						
Sept.	341,726	50,650	300,603	148,515	106,628	— 56,742
Oct.	330,787	50,240	299,068	135,140	116,232	— 53,181
Nov.	335,315	55,517	301,097	137,076	114,392	— 47,341
Dec.	360,526	58,125	304,619	136,581	99,479	— 22,549
Total	.....	.....	.....	.....	1,232,090	.....
1955						
Jan.	334,105	66,122	302,658	159,016	136,539	— 61,447
Feb.	323,425	75,840	301,597	180,898	118,786	— 83,230
Mar.	311,235	85,859	301,937	187,827	143,544	— 92,670
Apr.	316,575	88,992	304,117	205,308	115,073	—103,858
May	327,343	111,715	309,219	323,279	113,485	—102,440
June	327,696	126,703	309,972	234,578	132,377	— 90,151
July	312,587	165,505	301,048	286,095	75,846	—109,051
Aug.	304,097	150,854	303,089	283,653	97,688	—131,791
Sept.	334,996	133,391	314,111	270,102	113,628	—115,826
Oct.	353,469	135,075	313,048	275,255	115,453	— 99,759
Nov.	373,314	139,855	313,779	283,953	122,332	— 84,563
Dec.	389,974	139,094	314,145	293,264	127,006	— 78,341
Total	.....	.....	.....	.....	1,412,287	.....
1956						
Jan.	376,753	143,815	312,128	305,942	138,711	— 97,502
Feb.	388,823	135,637	319,279	282,314	130,923	— 77,133
Mar.	392,143	140,348	319,056	291,465	135,746	— 78,030
Apr.	413,979	135,071	319,247	266,239	118,839	— 36,436
May	435,083	131,023	318,592	249,352	122,253	— 1,838
June	451,126	114,223	324,970	227,097	113,835	+ 13,282
July	465,015	109,040	334,584	220,810	81,275	+ 18,661
Aug.	457,679	115,295	338,818	221,975	117,937	+ 12,181
Sept.	445,679	114,981	338,488	204,154	115,857	+ 18,018
Oct.	440,706	112,893	336,856	198,517	119,440	+ 18,226
Nov.	435,216	110,792	335,829	178,814	119,441	+ 31,365
Dec.	437,187	117,601	336,217	183,834	99,223	+ 34,737
Total	.....	.....	.....	.....	1,416,278	.....

Scrap Copper Receipts by Custom Smelters and Refineries in United States*

(In Short Tons)

	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957
Jan.	10,172	17,084	15,763	6.640	4,528	6,486	9,859	11,047	14,322	17,506
Feb.	11,893	20,238	12,500	5,153	3,633	10,337	8,490	15,198	14,497	11,136
Mar.	11,954	20,678	13,538	7,912	5,243	19,991	9,738	12,198	15,921	....
Apr.	15,125	15,968	12,304	8,553	6,214	16,583	9,004	13,162	17,233	....
May	16,357	14,237	8,749	8,458	8,033	10,857	8,687	15,133	20,805	....
June	11,178	8,809	20,523	8,628	4,425	10,945	13,309	14,765	14,758	....
July	8,370	7,782	10,040	6,642	5,188	9,063	10,260	9,988	12,632	....
Aug.	17,081	8,246	10,452	6,113	5,003	7,137	10,100	13,197	12,510	....
Sept.	16,001	10,980	4,903	3,561	4,667	9,042	10,641	15,037	9,518	....
Oct.	10,854	6,401	9,459	3,336	4,602	10,065	11,662	12,897	15,570	....
Nov.	7,625	15,347	9,237	3,179	4,724	7,815	10,879	9,865	11,369	....
Dec.	11,826	10,533	7,178	4,538	6,208	11,476	14,876	13,180	14,613	....
Total	147,931	156,303	142,067	71,812	62,470	129,798	127,449	154,714	173,748	

* As compiled by Copper Institute.

Brass and Bronze Ingot Monthly Shipments

(Net Tons)

The following figures showing the combined shipments of ingot brass and bronze are compiled by the Ingot Brass and Bronze Industry and represent in excess of 95 per cent of the deliveries of the entire industry.

	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957
Jan.	27,841	26,998	19,456	18,874	28,415	28,315	24,423	20,661	25,201	27,736	27,736
Feb.	24,686	22,487	15,026	18,487	27,168	24,211	25,429	19,920	25,349	24,949	20,769
Mar.	17,477	24,282	14,550	22,494	31,997	23,890	28,256	23,653	29,713	28,310	....
Apr.	24,577	25,177	10,695	22,118	30,472	22,547	25,044	24,746	27,641	25,808	....
May	19,526	23,716	11,114	23,643	33,267	21,740	21,660	22,269	23,708	23,437	....
June	16,929	24,401	9,696	25,093	33,817	21,274	20,818	22,348	23,141	18,842	....
July	16,728	20,456	10,220	21,609	32,016	18,947	19,321	17,074	18,513	17,364	....
Aug.	18,589	24,098	14,194	26,689	25,285	21,807	20,156	21,684	27,018	23,812	....
Sept.	19,025	23,641	16,208	28,811	22,285	22,770	21,463	22,464	26,349	20,929	....
Oct.	22,805	21,559	18,026	32,240	23,124	25,811	22,280	24,080	25,228	23,045	....
Nov.	21,666	21,731	18,488	31,748	23,544	23,441	21,860	23,061	25,102	21,818	....
Dec.	23,862	20,954	17,969	28,575	20,987	22,983	20,541	21,274	21,448	18,046	....
Total	263,711	279,500	175,643	303,563	332,378	277,736	271,251	263,233	298,406	274,096	....
Aver	21,976	23,292	14,637	25,297	27,615	23,145	22,604	21,936	24,867	22,841	....

Mine Production of Copper in United States

(U. S. Bureau of Mines)

(In short tons)

	Eastern	Missouri	Western	Total
1953				
Ttl.	38,900	2,374	885,174	926,448
1954				
Ttl.	40,302	1,925	793,241	835,472
1955				
July	4,678	169	28,496	33,343
Aug.	5,028	125	62,082	67,235
Sept.	6,928	130	83,213	90,271
Oct.	6,552	195	85,445	92,192
Nov.	6,188	184	84,681	91,053
Dec.	6,758	179	81,638	88,575
Ttl.	68,622	2,140	921,838	992,600
1956				
Jan.	6,674	163	88,277	95,114
Feb.	6,688	164	82,519	89,371
Mar.	7,347	198	90,599	98,104
Apr.	6,821	195	88,592	95,608
May	6,960	191	92,531	99,682
June	6,720	173	88,049	94,942
July	6,132	185	74,283	80,600
Aug.	6,638	219	85,224	92,067
Sept.	6,195	163	78,934	85,292
Oct.	6,405	183	87,102	93,690
Nov.	6,498	150	81,984	88,632
Dec.	6,603	150	80,452	87,205
Ttl.	79,681	2,130	1,018,496	1,100,307

Average Custom Smelters' Scrap Buying Prices

(Cents per pound for carload lots del. consumers' works)

	No. 1 Copper Scrap	No. 2 Copper Scrap	Light Copper Scrap	Refinery Brass*
1955				
Dec.	42.75	41.25	38.79	38.71
Av.	37.035	35.535	33.59	32.70
1956				
Jan.	42.39	40.89	38.42	38.26
Feb.	43.35	41.85	39.35	38.65
Mar.	45.77	44.27	41.77	41.02
Apr.	41.65	40.15	37.65	38.15
May	36.06	34.56	32.06	32.50
June	33.32	31.82	29.32	29.03
July	32.69	31.19	28.69	28.98
Aug.	34.269	32.769	30.269	30.75
Sept.	33.56	32.06	29.81	29.92
Oct.	30.964	29.464	27.214	27.44
Nov.	30.51	29.01	26.76	27.50
Dec.	30.423	28.923	26.673	27.42
Av.	36.25	34.75	32.33	32.47
1957				
Jan.	29.30	27.80	25.55	26.30
Feb.	26.47	24.97	22.72	23.75

*Of dry content for material having a dry copper content in excess of 60%.

Brass Ingot Makers' Scrap Copper Buying Prices

(Average Prices)

(Cents per pound del. refinery for 60,000 lbs. of each grade)

	No. 1 Copper Scrap	No. 2 Copper Scrap	No. 1 Composition	Heavy Yellow Brass
1955				
Dec.	43.58	41.22	34.84	24.22
Av.	36.63	35.02	29.905	22.35
1956				
Jan.	42.39	40.89	35.22	24.51
Feb.	43.35	41.85	34.72	24.79
Mar.	45.77	44.27	36.46	27.76
Apr.	41.65	40.15	34.40	24.49
May	36.06	34.56	29.58	19.89
June	33.32	31.82	26.37	18.40
July	32.69	31.19	26.89	18.43
Aug.	34.269	32.769	29.833	20.463
Sept.	33.26	32.25	30.07	20.92
Oct.	30.687	29.187	28.058	19.538
Nov.	30.39	28.89	26.69	18.91
Dec.	30.195	28.695	27.50	18.96
Av.	36.17	34.67	30.483	21.34
1957				
Jan.	29.27	27.77	26.59	18.55
Feb.	26.47	24.97	23.50	16.65

United States Lead Statistics of Primary Refineries

(American Bureau of Metal Statistics)
(In tons of 2,000 lbs.)

	Stock At Beginning	Production Primary & Secondary	Total Supply	Stock At End	Domestic Shipments
1953	43,560	533,883	577,443	81,152	488,437
1954	81,152	551,618	632,770	92,719	475,551
1955					
April	59,881	50,274	110,155	54,956	44,878
May	54,956	45,435	100,391	50,947	46,130
June	50,947	48,150	99,097	44,665	44,985
July	44,665	23,850	68,515	39,856	26,547
August	39,856	36,912	76,768	34,111	41,469
September	34,111	50,453	84,564	30,753	46,250
October	30,753	53,747	84,500	29,913	52,062
November	29,913	52,623	82,536	28,855	51,370
December	28,855	50,448	79,303	31,089	48,171
Total	.....	547,153	639,872	.....	531,339
1956					
January	31,089	51,306	82,395	32,469	49,746
February	32,469	49,475	81,944	41,450	39,411
March	41,450	54,174	95,624	52,089	39,344
April	53,089	52,976	105,065	53,958	44,986
May	53,958	47,961	101,919	50,460	40,703
June	50,460	47,367	97,827	45,951	41,458
July	45,951	48,479	94,430	49,134	36,483
August	49,134	48,404	97,538	59,304	48,464
September	39,304	53,530	92,834	40,542	47,519
October	40,542	54,815	95,357	42,314	45,254
November	42,314	50,744	93,058	37,192	47,349
December	37,192	54,063	91,254	41,181	44,191
Total	....	613,293	644,382	....	529,484
1957					
January	41,181	50,854	92,035	42,905	40,549

In instances where the figures are not in balance it is due to shipments to other than domestic consumers.

Industrial Classification of Domestic Lead Shipments

(American Bureau of Metal Statistics) (In tons of 2,000 lbs.)

	Cable	Amm.	Foil	Batt'y	Brass Making	Sundries	Jobbers	Unclassified
1951	70,149	32,099	2,063	75,337	5,583	48,248	3,550	259,155
1952	74,616	30,809	1,374	77,238	5,160	50,943	5,671	246,283
1953	76,283	34,415	2,136	80,339	5,716	55,936	6,390	227,222
1954								
Aug.	8,799	3,358	146	6,111	838	5,377	1,152	17,621
Sept.	4,602	1,653	564	4,110	20	4,667	851	14,424
Oct.	6,142	1,970	657	4,172	383	4,581	829	17,573
Nov.	5,816	3,795	333	3,898	520	3,202	721	16,628
Dec.	7,707	1,880	100	5,790	141	3,530	906	16,963
Total	75,412	30,246	2,811	66,088	5,192	57,369	9,170	229,264
1955								
Jan.	7,044	1,570	36	5,158	213	4,451	857	21,122
Feb.	5,869	3,200	348	6,758	289	4,796	1,013	24,373
Mar.	6,538	2,340	614	6,897	240	3,807	1,167	20,778
Apr.	5,909	2,625	201	6,533	463	5,178	1,234	22,735
May	6,145	2,950	251	8,127	321	4,435	1,145	22,756
June	6,623	950	50	6,833	290	5,175	1,293	23,816
July	2,313	150	307	4,365	100	3,763	946	14,603
Aug.	5,772	2,800	210	4,794	290	3,741	1,230	22,632
Sept.	6,552	2,295	415	7,794	354	4,711	1,149	22,980
Oct.	6,772	3,026	85	9,819	564	4,899	1,287	25,610
Nov.	6,606	2,433	70	13,875	387	3,795	874	23,330
Dec.	6,275	3,260	35	7,508	449	4,289	839	25,516
Total	72,418	27,599	2,622	88,461	3,960	52,994	13,034	270,251
1956								
Jan.	7,777	3,075	200	6,555	290	8,538	917	22,394
Feb.	5,974	2,435	384	5,983	275	3,592	871	19,897
Mar.	6,786	1,300	101	4,903	321	3,915	1,331	20,687
Apr.	6,744	2,950	310	4,839	260	3,522	1,376	24,985
May	6,490	2,825	...	5,027	131	3,513	964	21,753
June	8,502	2,150	...	4,167	186	3,645	1,021	21,787
July	3,497	904	...	5,007	80	2,859	1,453	22,683
Aug.	7,712	1,497	85	6,334	713	4,443	1,262	26,358
Sept.	6,354	1,850	135	6,303	230	5,038	1,339	26,270
Oct.	7,988	1,715	135	7,108	286	4,955	1,493	21,574
Nov.	6,096	2,351	....	8,556	226	5,573	792	23,755
Dec.	6,440	1,449	85	5,832	160	7,258	394	22,573
Total	80,360	24,501	1,435	70,614	3,158	56,851	13,213	274,716
1957								
Jan.	5,297	2,800	200	6,886	671	4,002	1,191	19,502

Lead Prices at New York

(Common Grade)
Monthly Average Prices
(Cents per pound)

	1954	1955	1956	1957
Jan.	13.26	15.00	16.16	16.00
Feb.	12.82	15.00	16.00	16.00
Mar.	12.94	15.00	16.00	....
Apr.	13.91	15.00	16.00	....
May	14.00	15.00	16.00	....
June	14.11	15.00	16.00	....
July	14.00	15.00	16.00	....
Aug.	14.06	15.00	16.00	....
Sept.	14.60	15.12	16.00	....
Oct.	14.975	15.50	16.00	....
Nov.	15.00	15.50	16.00	....
Dec.	15.00	15.56	16.00	....
Av.	14.06	15.14	16.013	....

Lead Sheet Prices

(To Jobbers, Full Sheets)
Monthly Average Prices
(Cents per pound)

	1954	1955	1956	1957
Jan.	18.26	20.00	21.66	21.50
Feb.	17.82	20.00	21.50	21.50
Mar.	17.94	20.00	21.50	....
Apr.	18.91	20.00	21.50	....
May	19.00	20.00	21.50	....
June	19.11	20.00	21.50	....
July	19.00	20.00	21.50	....
Aug.	19.06	20.00	21.50	....
Sept.	19.60	20.12	21.50	....
Oct.	19.975	20.50	21.50	....
Nov.	20.00	20.50	21.50	....
Dec.	20.00	20.56	21.50	....

Battery Shipments

The following table shows replacement battery shipments in the United States as compiled by the Business Information Division of Dun & Bradstreet, Inc., for the Association of American Battery Manufacturers:

(In thousands of units)

	1954	1955	1956	1957
Jan.	1,836	1,518	2,058	2,637
Feb.	1,461	1,691	1,340	....
Mar.	1,226	1,356	1,348	....
Apr.	1,180	1,315	1,368	....
May	1,429	1,614	1,761	....
June	1,883	1,842	1,807	....
July	2,350	2,078	2,178	....
Aug.	2,548	2,852	2,571	....
Sept.	2,800	3,120	2,711	....
Oct.	2,739	3,120	3,015	....
Nov.	2,475	2,697	2,592	....
Dec.	1,844	2,625	2,265	....
Total	23,771	25,828	25,014	....

Lead Stocks at Primary U. S. Smelters and Refiners

(American Bureau of Metal Statistics)

(In tons of 2,000 lbs.)

	In ore and matte and in process at smelters	— In base bullion (lead content) — At smelters & refineries	In transit to refineries	In process at refineries	Refined pig lead	Anti-monial lead	Total Stocks
1955							
Jan. 1	62,074	18,170	1,723	27,164	77,930	14,789	201,850
Feb. 1	59,303	15,485	3,133	29,393	69,980	14,902	192,196
Mar. 1	64,492	17,741	3,781	28,467	52,734	12,204	179,419
Apr. 1	57,577	20,063	2,309	28,564	47,496	12,385	168,394
May 1	59,686	17,468	3,496	25,373	43,207	11,749	160,979
June 1	59,632	17,705	1,941	27,979	39,892	11,055	158,204
July 1	58,182	14,707	2,941	30,579	34,432	10,233	151,074
Aug. 1	65,476	10,065	1,303	26,792	30,077	9,779	143,492
Sept. 1	75,057	17,183	3,744	29,660	26,859	7,252	159,755
Oct. 1	70,628	19,083	4,217	28,424	23,292	7,461	153,105
Nov. 1	71,257	20,682	4,276	28,596	21,828	8,085	154,724
Dec. 1	64,109	20,232	4,377	27,486	19,592	9,263	145,059
1956							
Jan. 1	71,812	16,532	3,764	27,625	21,196	9,893	150,822
Feb. 1	70,690	19,082	1,764	25,632	24,080	8,389	149,637
Mar. 1	71,023	16,406	2,583	27,519	32,355	9,095	158,981
Apr. 1	72,358	15,655	2,152	28,065	41,800	10,289	170,319
May 1	74,837	15,500	2,718	24,181	43,268	10,690	171,194
June 1	78,987	15,477	2,475	26,682	39,558	10,902	174,081
July 1	81,796	15,837	4,423	28,505	36,499	9,452	176,512
Aug. 1	76,985	16,856	3,516	29,603	38,210	10,924	176,094
Sept. 1	81,634	18,529	2,874	29,991	29,230	10,074	172,332
Oct. 1	77,787	15,991	4,413	28,083	29,361	11,181	166,816
Nov. 1	78,253	12,022	3,083	25,783	30,932	11,382	161,485
Dec. 1	82,197	9,095	4,132	25,627	25,360	11,832	158,243
1957							
Jan. 1	77,918	12,222	2,846	25,092	29,435	11,746	159,249
Feb. 1	80,451	10,636	4,061	25,827	32,418	10,487	163,880

Receipts of Lead in Ore and Scrap

By U. S. Smelters (a)

(American Bureau of Metal Statistics) (In tons of 2,000 lbs.)

	Receipts of lead in ore: United States	Foreign	Total	Receipts of lead in scrap etc. (b)	Total receipts in ore, & scrap
1952 Total	405,990	98,276	504,266	41,845	546,111
1953 Total	351,183	155,788	506,971	42,994	549,965
1954 Total	336,291	158,081	494,372	49,864	544,236
1955					
January	28,767	11,502	40,269	3,509	43,778
February	27,456	17,400	44,856	2,738	47,594
March	30,056	11,104	41,160	3,291	44,451
April	28,707	16,347	45,054	3,249	48,303
May	28,511	13,377	41,888	4,879	48,767
June	28,273	14,667	42,940	4,509	47,449
July	23,027	3,826	26,853	649	27,502
August	30,249	11,859	42,108	3,942	46,050
September	29,377	14,881	44,258	3,623	47,881
October	30,073	20,845	50,918	5,655	56,573
November	27,736	13,022	40,758	3,802	44,560
December	29,363	24,136	53,499	3,150	56,649
Total	341,595	172,966	514,561	42,996	557,557
1956					
January	27,184	15,704	42,888	6,346	49,234
February	28,569	16,528	45,097	4,577	49,674
March	31,568	17,904	49,472	3,989	53,461
April	31,786	15,224	47,010	4,252	51,262
May	32,715	18,476	51,191	4,711	55,902
June	31,546	16,251	47,797	4,541	52,338
July	29,964	13,476	43,440	3,207	46,647
August	31,112	20,726	51,838	5,885	57,723
September	28,731	16,276	45,007	3,351	48,358
October	33,614	12,350	45,964	5,439	51,403
November	30,553	14,308	44,861	5,141	50,002
December	31,154	15,095	46,252	4,536	50,788
Total	368,499	192,318	560,817	55,925	616,792
1957					
January	30,632	19,961	50,593	4,471	55,064

(a) Receipts of lead in ore are computed on the basis of recoverable lead. Owing to the estimational factor in this, which is probably on the low side, and also to the possibility that some lead receipts may escape attention, these monthly totals probably underrun the actual production of pig lead. (b) inclusive only of scrap smelted in connection with ore, plus some scrap received by primary refiners.

N. Y. Lead Price Changes

(Effective Date)

1949		1953	
Nov. 16	12.50	Jan. 7	14.50
Nov. 21	12.00	Jan. 12	14.00
1950		Feb. 2	13.50
Mar. 9	11.00	Mar. 4	13.30
Mar. 14	10.50	Mar. 10	13.50
Apr. 20	10.75	Apr. 7	13.00
Apr. 26	11.00	Apr. 16	12.50
May 4	11.25	Apr. 21	12.00
May 10	11.50	Apr. 29	12.50
May 11	12.00	May 18	12.75
June 23	11.50	May 19	13.00
1951		May 26	13.15
June 28	11.00	June 11	13.50
July 12	11.50	July 20	13.75
July 13	12.00	July 23	14.00
Aug. 15	13.00	Sept. 16	13.50
Aug. 21	14.00	1954	
Sept. 1	15.00	Jan. 18	13.00
Sept. 8	16.00	Feb. 18	12.50
Oct. 2	**19.00	Mar. 9	12.75
Oct. 31	17.00	Mar. 10	13.00
1952		Mar. 26	13.25
Apr. 29	18.00	Mar. 29	13.50
May 2	17.00	Apr. 1	13.75
May 12	15.00	Apr. 12	14.00
June 23	15.50	June 2	14.25
June 24	16.00	June 15	14.00
Oct. 7	15.00	Aug. 25	14.25
Oct. 14	14.00	Sept. 7	14.50
Oct. 22	13.50	Sept. 15	14.75
Nov. 3	14.00	Oct. 4	14.875
Nov. 10	14.25	Oct. 5	15.00
Nov. 11	14.50	1955	
Nov. 20	14.25	Oct. 23	15.00-15.50
Nov. 24	14.00	Oct. 26	15.50
Dec. 22	14.25	Dec. 29	16.00
Dec. 29	14.50	1956	
Dec. 31	14.75	Jan. 4	16.50
		Jan. 13	16.00

*OPA Ceiling. ‡Returned to OPA Ceiling. **OPS Ceiling.

Antimonial Lead Stocks at Primary Refineries

(A. B. M. S.)

(In tons of 2,000 lbs.)

End of:	1954	1955	1956	1957
Jan.	14,691	14,902	8,389	10,487
Feb.	14,798	12,204	9,095	....
Mar.	11,985	12,385	10,289	....
Apr.	11,977	11,740	10,690	....
May	11,882	11,055	10,902	....
June	9,798	10,233	9,452	....
July	12,210	9,779	10,924	....
Aug.	12,279	7,252	10,074	....
Sept.	14,168	7,461	11,181	....
Oct.	14,846	8,085	11,382	....
Nov.	14,573	9,263	11,832	....
Dec.	14,789	9,893	11,746	....

Antimonial Lead Production by Primary Refineries

(A. B. M. S.)

(In tons of 2,000 lbs.)

End of:	1954	1955	1956	1957
Jan.	3,768	4,529	5,045	5,113
Feb.	4,257	4,777	5,888	....
Mar.	4,475	6,202	5,526	....
Apr.	4,470	5,343	5,818	....
May	4,373	4,737	5,405	....
June	3,796	4,792	4,456	....
July	5,991	1,153	3,853	....
Aug.	6,455	2,946	5,342	....
Sept.	5,869	6,650	6,709	....
Oct.	5,532	8,016	5,378	....
Nov.	5,364	7,985	6,993	....
Dec.	5,255	6,907	5,766	....
Total	59,875	64,037	66,180	....

U. S. Lead Consumption

(Bureau of Mines—In Short Tons)

	1955 Totals	1956 Prelim. Totals	1956 Dec.
Metal Products:			
Ammunition	46,816	44,238	2,980
Bearing metals	34,567	27,828	1,963
Brass and bronze	24,043	26,351	1,706
Cable covering	121,165	133,924	10,608
Caulking lead	59,406	60,487	3,628
Casting metals	15,141	11,304	757
Collapsible tubes	11,136	10,155	607
Foil	5,185	4,552	351
Pipes, traps and bends	29,757	26,777	1,686
Sheet lead	30,466	29,674	2,058
Solder	88,749	72,015	6,097
Storage battery grids, posts, etc.	195,787	185,171	15,382
Storage battery oxides	184,246	180,960	15,164
Terne metal	2,382	1,719	208
Type metal	26,507	23,576	2,075
Total	875,353	838,731	65,270
Pigments:			
White lead	18,549	16,951	1,105
Red lead and litharge	87,503	78,905	6,325
Pigment colors	15,000	13,866	1,279
Other*	§10,383	5,503	417
Total	§131,435	115,225	9,126
Chemicals:			
Tetraethyl lead	165,133	191,990	11,594
Miscellaneous chemicals	5,492	2,722	310
Total	170,625	194,712	11,904
Miscellaneous uses:			
Annealing	6,059	4,744	425
Galvanizing	2,313	1,512	117
Lead plating	848	693	51
Weights and ballast	7,673	6,040	390
Total	16,893	12,989	983
Other uses unclassified	18,338	16,316	1,384
Total reported	1,212,644	†1,177,973	†88,667
Estimated unreported consumption		12,000	1,000
Grand total	1,212,644	†1,190,000	†89,700
Daily average‡	3,435	3,260	2,894

* Includes lead content of leaded zinc oxide production.
† Includes lead content of scrap used directly in fabricated products.
‡ Based on number of days in month without adjustment for Sundays or holidays.
§ Revised.

U. K. Lead Consumption

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 pounds)

	1954	1955	1956
Jan.	25,786	29,062	31,012
Feb.	25,837	28,926	30,125
Mar.	29,442	33,225	30,099
Apr.	25,820	28,656	28,186
May	28,637	31,092	29,752
June	28,574	32,627	31,501
July	25,968	26,994	26,963
Aug.	25,671	26,954	25,077
Sept.	30,631	34,291	30,274
Oct.	30,123	34,121	32,057
Nov.	30,142	34,820	32,036
Dec.	28,840	29,689	25,963
Total	335,887	370,794	353,045

American Antimony

Monthly Average Prices
In bulk, f.o.b. Laredo
(Cents per lb. in ton lots)

	1954	1955	1956	1957
Jan.	28.50	28.50	33.00	33.00
Feb.	28.50	28.50	33.00	33.00
Mar.	28.50	28.50	33.00	....
Apr.	28.50	28.50	33.00	....
May	28.50	28.50	33.00	....
June	28.50	28.50	33.00	....
July	28.50	28.50	33.00	....
Aug.	28.50	30.66	33.00	....
Sept.	28.50	33.00	33.00	....
Oct.	28.50	33.00	33.00	....
Nov.	28.50	33.00	33.00	....
Dec.	28.50	33.00	33.00	....
Aver.	28.50	30.18	33.00	....

Lead Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in pigs, bars, etc.; metric tons except where otherwise noted.

	1956 Oct.	1956 Nov.	1956 Dec.
IMPORTS			
U. S.† (s.t.)	15,035	28,503	40,630
Canada (s.t.)	1	...	...
Denmark	1,609	1,463	884
France	7,898	4,312	3,530
Germany, W.‡	4,652	2,810	...
Italy‡‡	339	...	...
Netherlands	3,923	2,615	...
Norway	1,011	779	...
Sweden	1,176	1,278	1,070
Switzerland	1,549	1,459	2,168
U. K. (l.t.)	10,372	14,508	19,865
India* (l.t.)	985	...	...
EXPORTS			
U. S.† (s.t.)	26	42	155
Canada (s.t.)	9,072	9,278	2,733
Denmark	307	70	199
France	160	49	142
Germany, W.‡	2,892	2,835	...
Netherlands	733	531	...
Switzerland	20	32	...
Northern Rhodesia* (l.t.)	956	1,425	...

† Refined.
‡ Includes scrap.
‡‡ Includes lead alloys.
* British Bureau of Non-Ferrous Metal Statistics.

French Lead Imports

(A.B.M.S.)

(In metric tons)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Dec. 1956
Ore (gross weight)	108,661	106,966	6,370
Greece	2,083	4,831	.....
Italy	1,376	1,130	.....
Sweden	1,240	.....	.....
Algeria	3,771	4,978	500
Morocco	92,297	89,020	5,870
French Equat. Africa	6,093	6,031	.....
Tunisia	1,801	976	.....
Pig lead:			
Argentiferrous	405	†	†
Germany (West)	5	.....	.....
Norway	95	.....	.....
Rhodesia	305	.....	.....
Non-argentiferrous	47,755	56,238	3,530
Belgium	3,454	3,411	20
Germany (West)	3,719	5,470	776
Greece	110	.....	.....
Norway	126	.....	.....
Spain	.....	100	.....
United Kingdom	5	661	.....
Algeria	282	430	.....
Morocco	15,951	20,203	67
Tunisia	24,097	25,672	2,641
Australia	3	203	.....
Other countries	8	88	26
Antimonial lead	791	882	12

† No available.

Consumers' Lead Stocks, Receipts and Consumption

(Bureau of Mines — In Short Tons)

	Stocks Nov. 30, 1956	Net Receipts In Dec.	Consumed In Dec.	Stocks Dec. 31, 1956
Soft lead	*53,620	67,661	54,200	67,081
Antimonial lead	39,319	24,869	25,078	39,110
Lead in alloys	7,868	4,059	4,264	7,663
Lead in copper-base scrap	1,881	1,432	1,302	2,011
Total	*102,688	98,021	†84,844	115,865

* Revised.
† Excludes 3,416 tons of lead which went directly from scrap to fabricated products and 407 tons of lead contained in leaded zinc oxide production.

Consumption of Lead by Class of Product

(Bureau of Mines — In Short Tons)

DECEMBER

	Soft lead	Antimonial lead	Lead in alloys	Lead in Copper-base scrap	Total
Metal products	31,404	24,717	4,155	1,302	61,578
Pigments	9,116	10	....	....	9,126
Chemicals	11,900	4	....	....	11,904
Miscellaneous	744	108	....	....	852
Unclassified	1,036	239	109	....	1,384
Total	54,200	25,078	4,264	1,302	†84,844

† Excludes 3,416 tons of lead which went directly from scrap to fabricated products and 407 tons of lead contained in leaded zinc oxide production.

U. K. Lead Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

(Gross Weight)	Jan.-Dec. 1955	Jan.-Dec. 1956	Jan. 1957
Lead and lead alloys	217,809	167,970	16,257
Australia	126,526	101,740	8,861
Canada	55,023	45,547	4,980
Belgium	724	6,884	900
Yugoslavia	6,763	1,350	250
United States	6,512	951	...
Peru	9,749	7,474	651
Other countries	12,512	4,024	615

Domestic Zinc Statistics

American Zinc Institute

Commencing with January, 1948, all regularly operating U. S. primary and secondary smelters are included in this report. Production from foreign ores also is included.

(Tons of 2,000 lbs.)

	Stock Beginning	Production	Shipments: Domestic	Shipments: Export & Drawback	Shipments: Gov't Acc't	Shipments: Total	Stock at End	Unfilled Orders at End	Daily Avg. Prod.
1950 Tl.	94,221	910,354	849,246	18,189	128,256	995,691	8,884	74,795	2,494
1950 Mo. Avg.		75,863	70,770	1,516	10,688	82,974			
1951 Tl.	8,884	931,833	836,800	32,067	39,949	918,816	21,901	50,509	2,553
1951 Mo. Avg.		77,653	69,733	3,506	3,329	76,568			
1952 Tl.	21,901	961,430	803,343	56,202	36,626	896,171	87,160	45,264	2,627
1952 Mo. Avg.		80,119	66,945	4,683	3,052	74,681			
1953 Tl.	180,843	971,191	818,850	16,326	42,332	877,508	180,843	35,466	2,661
1953 Mo. Avg.		80,933	68,238	1,361	3,528	73,126			
1954									
Dec.	134,639	85,166	75,105	3,405	17,218	95,728	124,077	45,862	2,747
Total	124,277	868,242	787,922	27,929	108,957	924,808	124,077	45,862	....
Monthly Avg.		72,353	65,660	2,327	9,080	77,067	.....	.....	2,379
1955									
Jan.	124,277	86,076	70,863	2,644	19,694	93,201	117,152	57,421	2,777
Feb.	117,152	78,977	80,016	3,743	16,205	99,964	96,165	54,527	2,820
Mar.	96,165	89,179	79,720	1,828	12,959	94,507	90,837	60,057	2,877
Apr.	90,837	83,786	89,589	1,967	8,488	100,044	74,597	65,127	2,793
May	74,579	86,177	83,336	3,802	10,434	97,572	63,184	70,087	2,780
June	63,184	84,458	92,212	1,492	5,335	99,039	48,603	57,281	2,815
July	48,603	84,400	76,812	862	4,039	81,713	51,290	64,056	2,738
Aug.	51,290	84,874	87,042	885	2,153	90,080	46,084	73,632	2,738
Sept.	46,084	83,448	83,664	1,274	2,427	87,365	42,167	52,278	2,781
Oct.	42,167	89,449	85,770	36	1,942	87,748	43,868	61,746	2,886
Nov.	43,868	86,616	91,585	280	1,561	93,426	38,058	64,560	2,921
Dec.	38,058	92,578	87,010	684	1,963	89,657	40,979	72,908	2,986
Total	40,979	1 031,018	1,007,619	19,496	87,200	1,114,316	40,979	72,908	....
Monthly Avg.		85,918	83,968	1,625	7,267	92,860			2,825
1956									
Jan.	40,979	90,313	87,723	1,084	1,155	89,962	41,330	60,717	2,918
Feb.	41,330	86,329	84,727	317	2,782	87,826	39,833	45,255	2,977
Mar.	39,833	91,690	84,204	460	6,821	91,485	40,038	53,070	2,958
Apr.	40,038	88,664	74,789	1,437	4,570	80,795	47,907	46,106	2,955
May	47,907	81,233	69,085	287	10,196	69,568	59,577	34,003	2,620
June	59,577	78,321	53,048	539	15,085	68,672	69,226	45,921	2,611
July	69,226	83,080	34,219	811	14,501	49,531	102,775	53,559	2,680
Aug.	102,775	89,549	70,707	1,235	16,075	88,017	104 307	55,769	2,889
Sept.	104,307	90,235	73,142	934	18,301	92 377	102.165	64,450	3,008
Oct.	102,165	93,493	84,991	465	21,392	106,848	88,810	53,425	3,016
Nov.	88,810	91,808	82,478	787	27,168	110,433	70,185	45,866	3,060
Dec.	70,185	98,234	80,772	671	18,354	99,797	68,622	34,913	3,169
Total		1,062,954	869,270	9,027	157,014	1,035,311			
Monthly Avg.		88,850	72,439	752	13,085	86,275			2,904
1957									
Jan.	68,622	93,452	67,273	450	15,377	83,100	78,974	42,922	3,014
Feb.	78,974	87,974	67,675	1,527	10,905	80,107	86,841	56,421	3,142

U. S. Consumption of Slab Zinc

Bureau of Mines

By Industries (Short Tons)

	Galvanizers	Die Casters	Brass products	Rolled zinc	Zinc oxide & other	Total
1949 Total	348,544	197,387	84,257	55,100	17,643	702,931
1950 Total	434,094	281,385	136,451	67,779	27,656	947,365
1951 Total	386,373	266,442	141,456	64,000	28,738	887,009
1952 Total	375,563	236,022	155,311	51,508	30,885	849,289
1953 Total	403,162	305,346	177,301	53 784	38,037	977,636
1954						
November	34,212	30,572	10,573	3,969	2,785	82,461
December	32,263	31,781	10,961	3,350	2,987	81,342
Total	398,599	286,817	107,293	45,979	33,342	876,130
1955						
January	32,638	32,863	12,313	3,754	3,151	84,719
February	31,601	31,254	10,690	3,912	2,745	80,202
March	37,648	37,682	12,718	4,635	3,305	95,988
April	36,136	36,628	11,034	3,833	3,181	90,812
May	37,471	36,926	12,404	4,203	3.409	94,413
June	37,874	32,821	13,305	5,012	3,227	92,239
July	33,433	23,910	7,017	2,832	2,897	70,589
August	38,317	30,168	10,244	5,431	3,027	87,687
September	39,181	31,804	12,672	4,185	3,507	91,849
October	40,030	35,136	13,961	4,714	3,596	97,940
November	38,116	38,616	13,455	3,952	3,636	98,275
December	37,249	36,982	15,003	3,900	3,621	96,755
Total	439,694	404,790	144,816	50,363	39,302	1,081,468
1956						
January	38,148	36,554	13,097	4,442	3,665	95,906
February	37,702	31,274	12,678	3,883	3,325	88,862
March	38,662	31,332	12,889	4,433	3,566	90,882
April	37,092	29,226	12,635	4,010	3,359	86,322
May	38,064	26,003	12,218	3,431	1,260	80,976
June	37,005	21,790	8,351	3,454	1,315	71,915
July	12.960	21.425	5,193	3.187	2,883	45.648
August	33,840	26,814	8,420	4,222	2,959	76,255
September	37,313	26,998	8,370	3,397	3,280	79,358
October	40.875	34.985	10.164	4.158	3.695	93.877
November	36,767	32,812	9,581	3,625	3,539	87,224
December	32,790	33,238	8,799	3,140	3,405	82,272
Total	421,218	352,451	122,395	45,382	36,251	988,097

Prime Western Zinc Prices

(Cents per pound)

(In tons of 2,240 pounds)

	1954	1955	1956	1957
Jan.	9.76	11.50	13.46	13.50
Feb.	9.375	11.50	13.50	13.50
Mar.	9.66	11.50	13.50	....
Apr.	10.25	11.93	13.50	....
May	10.29	12.00	13.50	....
June	10.96	12.25	13.50	....
July	11.00	12.50	13.50	....
Aug.	11.00	12.50	13.50	....
Sept.	11.44	12.96	13.50	....
Oct.	11.50	13.02	13.50	....
Nov.	11.50	13.00	13.50	....
Dec.	11.50	13.00	13.50	....
Av.	10.69	12.305	13.497	....

High Grade Zinc Prices

(Delivered)

N. Y. Monthly Averages

(Cents per pound)

	1954	1955	1956	1957
Jan.	11.11	12.85	14.81	14.85
Feb.	10.725	12.85	14.85	14.85
Mar.	11.01	12.85	14.85	....
Apr.	11.60	13.28	14.85	....
May	11.64	13.35	14.85	....
June	12.31	13.60	14.85	....
July	12.35	13.85	14.85	....
Aug.	12.35	13.85	14.85	....
Sept.	12.79	14.31	14.85	....
Oct.	12.85	14.37	14.85	....
Nov.	12.85	14.35	14.85	....
Dec.	12.85	14.35	14.85	....
Av.	12.04	13.655	14.847	....

U. K. Zinc Consumption

British Bureau of Non-Ferrous Metal Statistics

(In Tons of 2,240 Pounds)

	1954	1955	1956
Jan.	25,615	29,192	29,779
Feb.	25,286	28,814	29,568
Mar.	29,001	33,451	28,650
Apr.	26,084	27,741	25,348
May	27,551	29,237	27,922
June	29,665	31,467	26,650
July	23,012	23,695	23,826
Aug.	22,102	23,261	18,867
Sept.	30,413	30,080	25,470
Oct.	28,543	29,460	27,784
Nov.	27,901	31,516	27,713
Dec.	29,344	28,683	24,134
Total	324,517	346,597	315,711

Mine Production of Zinc in United Ctates

(U. S. Bureau of Mines)

(In short tons)

	Eastern States	Central States	Western States	Total U.S.*
1952				
Total	185,939	94,410	385,652	666,001
1953				
Total	183,612	57,300	293,818	534,730
1954				
Total	166,487	63,100	234,942	464,539
1955				
Sept.	13,830	5,834	22,490	42,154
Oct.	13,332	5,339	22,496	41,167
Nov.	12,676	5,532	21,347	39,555
Dec.	12,644	5,250	21,721	39,615
Total	163,230	73,630	277,811	514,671
1956				
Jan.	13,830	5,263	22,073	41,166
Feb.	13,975	5,236	23,506	42,717
Mar.	15,058	5,740	26,975	47,773
Apr.	14,172	5,098	25,618	44,888
May	14,834	5,557	26,840	47,232
June	13,730	5,228	26,135	45,093
July	13,028	5,364	24,571	42,963
Aug.	14,559	5,425	25,453	45,437
Sept.	13,567	4,628	23,785	41,980
Oct.	17,439	4,815	26,607	48,861
Nov.	15,604	4,566	25,279	45,449
Dec.	15,513	4,160	24,411	44,084
Total	175,310	61,080	301,253	537,643
1957				
Jan.	18,746	4,493	24,910	48,149

*Includes Alaskan output in some months.

Mine Production of Lead in United States

(U. S. Bureau of Mines)

(In short tons)

	Eastern States	Central States	Western States	Total U.S.*
1952				
Ttl.	11,252	150,302	228,607	390,161
1953				
Ttl.	9,970	136,650	188,776	335,412
1954				
Ttl.	8,608	138,940	169,804	317,352
1955				
Aug.	821	12,109	13,883	26,813
Sept.	906	11,676	14,294	26,876
Oct.	924	11,635	15,005	27,564
Nov.	762	11,731	13,482	25,975
Dec.	771	13,628	13,403	27,802
Ttl.	10,379	145,640	177,409	333,409
1956				
Jan.	895	11,633	14,294	26,822
Feb.	1,141	12,100	15,009	28,250
Mar.	1,202	13,232	16,516	30,950
Apr.	1,028	11,948	16,729	29,705
May	1,091	12,497	16,387	29,975
June	897	11,492	17,092	29,481
July	749	11,459	15,761	27,969
Aug.	879	12,760	16,991	30,630
Sept.	868	10,632	15,915	27,415
Oct.	879	12,698	17,843	31,520
Nov.	862	10,779	16,862	28,503
Dec.	804	10,670	15,635	27,109
Ttl.	11,395	141,900	195,034	348,329
1957				
Jan.	1,002	12,089	16,210	29,301

*Includes Alaskan output in some months.

Mine Production of Gold in United States

(U. S. Bureau of Mines)

(In fine ounces)

	Eastern States	Western States	Alaska*	Total
1952				
Ttl.	1,948	1,650,660	233,428	1,886,036
1953				
Ttl	1,529	1,689,668	273,479	1,964,676
1954				
Ttl.	1,731	1,577,216	252,794	1,831,741
1955				
Aug.	171	119,327	40,931	160,429
Sept.	170	139,811	52,153	192,134
Oct.	182	140,812	43,486	184,480
Nov.	168	144,837	35,530	180,535
Dec.	166	143,827	5,000	148,993
Ttl.	2,026	1,634,625	247,535	1,884,186
1956				
Jan.	121	132,919	1,977	135,017
Feb.	154	130,264	866	131,284
Mar.	198	134,331	62	134,591
Apr.	156	136,360	522	137,038
May	175	141,319	4,130	145,624
June	199	139,544	12,312	152,055
July	45	126,204	31,515	157,764
Aug.	178	136,827	45,452	182,457
Sept.	194	137,556	40,574	178,324
Oct.	194	129,424	35,901	165,519

*Alaska totals based on mint and smelter receipts.

Mine Production of Recoverable Silver in United States

(U. S. Bureau of Mines)

(In Fine Ounces)

	Eastern States	Missouri	Western States	Alaska*	Total
1953 Total	158,707	223,500	36,354,685	39,111	36,776,003
1954 Total	**142,180**	**283,600**	**36,121,368**	**35,140**	**36,582,288**
1955					
August	12,360	38,100	2,723,552	5,477	2,779,489
September	11,517	37,180	2,927,151	6,954	2,982,802
October	15,152	35,540	3,145,297	6,704	3,202,693
November	12,476	36,040	2,963,360	4,735	3,016,611
December	11,831	37,556	2,849,045	750	2,899,182
Total	159,038	438,000	36,103,723	33,804	36,734,565
1956					
January	4,664	30,880	2,869,878	316	2,911,551
February	**12,252**	**32,430**	**2,967,837**	**82**	**3,012,601**
March	16,536	34,370	3,243,598	11	3,294,515
April	6,918	32,050	3,212,308	61	3,251,337
May	13,870	33,300	3,081,054	545	3,128,769
June	11,758	30,610	3,103,654	524	3,147,546
July	17,069	31,160	2,702,563	4,116	2,754,908
August	11,073	35,180	3,243,126	6,322	3,295,701
September	12,111	28,700	2,879,687	5,664	2,926,162
October	7,696	34,540	3,122,958	4,942	3,170,136

*Alaska totals based on mint and smelter receipts.
**Includes a total of 3,708 oz. from Illinois.

U. S. Silver Production*

(A.B.M.S.)

(In thousands of ounces; commercial bars, 0.999 fine, and other refined forms)

	Dom.†	For.	Total
1952 Total	40,245	36,653	**76,898**
1953 Total	34,697	37,764	**72,461**
1954 Total	38,059	39,422	77,481
1955			
August	2,005	1,669	**3,674**
September	2,840	2,855	**5,695**
October	2,432	3,889	**6,321**
November	3,087	2,775	**5,862**
December	3,180	3,652	**6,832**
Total	33,101	32,780	**65,881**
1956			
January	3,249	4,159	**7,408**
February	3,615	4,033	**7,648**
March	3,790	3,550	**7,340**
April	2,898	3,191	**6,089**
May	2,905	3,709	**6,614**
June	2,501	2,248	**4,749**
July	3,828	2,838	**6,666**
August	3,035	3,818	6,853
September	2,828	3,002	5,830
October	3,454	3,125	6,579
November	2,886	2,685	5,571
December	3,168	3,802	6,970
Total	38,157	40,160	78,317
1957			
January	2,997	2,877	5,874

* The separation between silver of foreign and domestic origin on the basis of refined bars and other refined forms is only approximate.
† Includes purchases of crude silver by the U. S. Mint.

Production of Primary Aluminum in the U. S.*

(U. S. Bureau of Mines)

(In short tons)

	1950	1951	1952	1953	1954	1955	1956	1957
Jan.	50,023	67,954	76,934	89,895	116,247	128,203	140,394	147,030
Feb.	54,493	62,740	72,374	92,649	110,483	116,236	132,763	119,064
Mar.	58,747	70,022	77,069	104,460	122,339	130,272	145,895	
Apr.	58,024	67,701	76,880	102,071	120,434	126,394	144,726	
May	51,929	67,720	80,803	105,464	125,138	131,128	150,800	
June	60,400	67,454	77,476	104,152	120,758	127,634	145,726	
July	63,518	72,698	78,368	109,285	126,161	132,669	151,624	
Aug	63,006	73,816	85,175	110,545	125,296	133,551	92,406	
Sept.	54,449	69,429	76,882	109,333	120,332	130,606	132,316	
Oct.	62,915	72,647	77,312	108,219	125,089	134,655	149,125	
Nov.	62,276	72,246	74,639	105,636	121,252	133,689	145,081	
Dec.	65,897	72,454	83,419	110,291	127,056	140,748	148,391	
Total	718,622	836,881	937,330	1,252,013	1,460,565	1,565,721	1,679,427	

* Based on producers' reports to War Production Board to July, 1946. Thereafter to Bureau of Mines. The monthly figures are preliminary in nature and will not add to the totals derived from the Bureau's annual industry canvass.

Average Silver Prices

(Cents per fine ounce)

	1954	1955	1956	1957
Jan.	85.25	85.25	90.357	91.375
Feb.	85.25	85.25	90.90	91.375
Mar.	85.25	85.25	91.138	
Apr.	85.25	87.08	90.875	
May	85.25	88.928	90.75	
June	85.25	89.71	90.46	
July	85.25	90.49	90.14	
Aug.	85.25	90.75	90.614	
Sept.	85.25	90.795	90.75	
Oct.	85.25	91.794	90.722	
Nov.	85.25	91.46	91.375	
Dec.	85.25	90.45	91.375	
Ave.	85.25	89.116	90.79	

Note — The averages are based on the price of refined bullion imported on or after August 31, 1943.

U. S. Copper Imports

(A.B.M.S.) (Bureau of the Census)
(In tons of 2,000 lbs.)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Dec. 1956
Ore, matte & regulus (cont.)	125,659	122,155	9,962
Canada	27,391	24,715	1,834
Mexico	12,306	10,946	599
Cuba	20,356	15,378	886
Bolivia	3,433	4,500	326
Chile	21,600	18,711	612
Peru	9,847	12,545	1,963
Cyprus	4,388	6,944	2,289
Philippines	13,321	10,912	1
U. of So. Africa	10,269	15,237	1,136
Australia	2,461	1,527	..
Other countries	287	740	†316
Blister copper (cont.)	253,693	276,096	34,794
Canada	301	1,038	..
Mexico	28,105	37,411	2,860
Chile	137,886	175,891	29,954
Peru	3,483	14,294	..
United Kingdom	542	..	..
Angola	..	1,085	..
Belgian Congo	9,231	4,346	..
Northern Rhodesia	62,545	13,462	..
U. of So. Africa	2,218	6,054	1,980
Turkey	547	5,585	..
Australia	8,835	16,930	..
Refined cathodes and shapes	201,640	191,079	15,419
Canada	72,371	93,852	8,891
Mexico	7,919	4,032	..
Chile	66,614	40,925	3,837
Peru	17,771	16,000	..
Belgium	338	769	..
Germany (West)	3,577	2,738	..
Netherlands	2,291	..	..
Norway	149	5,970	325
Sweden	1,024	224	..
United Kingdom	11,105	3,349	..
Yugoslavia	2,149	138	..
Belgian Congo	4,929	8,417	949
No. Rhodesia	10,656	13,865	1,417
U. of So. Africa	602	..	..
Japan	68	800	..
Other countries	77	..	..
Total Imports:			
Crude and refined	580,992	589,330	60,175
In rolls, sheets or rods	11,202	8,917	643
Old and scrap (cont.)	12,587	5,645	229
Composition metal (cont.)	48	92	35
Brass scrap and old (cu. cont.)	8,475	4,441	271

† Includes 277 tons from Argentina.

U. S. Zinc Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Dec. 1956
Ore, concentrates (cont.)		855	273
Slabs, blocks, etc.	17,901	8,815	413
Canada	8	3	..
Mexico	794	836	55
Cuba	11	87	..
Argentina	6,063	..	..
Brazil	35	48	..
Chile	6	96	..
Belgium	3,219	1,988	280
Denmark	83	..	..
Germany (West)	..	167	..
Netherlands	..	44	30
United Kingdom	7,504	5,040	..
Korea	132	433	22
India	..	2	..
Other countries	46	71	26
Total Exports:			
Ore, conc., slabs, blocks	17,901	9,670	686
Scrap: Ashes, dross and skimmings	21,611	12,694	521
Rolled in sheets, plates and strips*	4,221	5,575	511

* Includes photoengraving sheets and plates, alloys, ex brass and bronze, die castings, battery shells and parts unassembled.

U. S. Copper Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Dec. 1956
Ore, conc., matte and other unref. (cont.)	7,648	5,350	736
Refined ingots, bars, etc.†	199,819	221,992	39,620
Canada	1,155	2,870	124
Argentina	2,975	..	..
Brazil	8,906	8,358	1,444
Austria	1,261	295	..
Belgium	1,154	55	5
Denmark	270	457	448
France	65,062	59,968	4,676
Germany (West)	35,251	32,900	6,191
Italy	9,659	26,158	6,300
Netherlands	16,224	8,369	1,875
Norway	2,575	2,473	442
Sweden	6,447	1,825	453
Switzerland	8,685	15,092	2,321
United Kingdom	28,092	15,009	7,313
Formosa	187	969	..
India	4,830	15,835	2,265
Japan	184	29,431	4,816
U. of So. Africa	..	475	25
Australia	6,263	560	560
Other countries	639	893	§362
Total exports:			
Crude and refined	207,467	227,342	40,356
Pipes and tubes*	2,270	2,437	161
Wire, bare	6,976	11,104	1,450
Building wire and cable‡	5,035	3,726	366
Weatherproof wire‡	735	865	64
Insulated copper wire n.e.s.‡	14,205	13,842	920

† Includes exports of refined copper resulting from scrap that was reprocessed on toll for account of shipper.

‡ Gross weight; n.e.s.—not elsewhere specified.

§ Includes 220 tons to Yugoslavia.

* Includes plates, sheets, rods, brush copper, castings, rolls, segments (finished forms) n.e.s.

U. S. Copper Scrap Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Dec. 1956
Copper scrap, unalloyed* (new and old)	31,137	25,678	3,167
Canada	2,340	5,239	517
Austria	222	..	..
Belgium	740	176	..
France	44	142	27
Germany (West)	19,243	5,736	176
Italy	354	49	..
Netherlands	241	198	..
Spain	53	..	..
Switzerland	273	232	..
United Kingdom	6,730	..	..
India	744	110	..
Japan	143	13,727	2,447
Other countries	10	69	..
Copper-base scrap, alloyed† (new & old)	45,257	50,484	6,386
Canada	136	491	..
Mexico	10	3	..
Austria	267	291	..
Belgium	105	144	..
Germany (West)	31,599	17,977	2,343
Italy	4,134	4,533	860
Netherlands	1,296	715	53
Spain	301	491	202
Switzerland	1,182	503	112
United Kingdom	3,829	693	293
India	375	2,165	186
Japan	1,936	22,147	2,309
Other countries	87	331	28

* Ash, brass mill, clippings, dross, flue dust, residues, scale, skimmings, wire scrap.

† Copper-base alloys, including brass and bronze — Ashes, clippings for remanufacture, cupro-nickel scrap, cupro-nickel trimmings, nickel silver scrap, phosphor bronze, phosphor copper, skimmings, turnings, round.

U. S. Lead Imports

(A.B.M.S.) (Bureau of the Census)
(In tons of 2,000 lbs.)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Dec. 1956
Ore, matte, etc. (cont.)	177,479	196,513	15,465
Canada	33,090	30,690	1,566
Mexico	2,201	3,866	565
Guatemala	5,208	6,968	722
Honduras	2,757	2,970	417
Bolivia	13,832	17,177	2,373
Chile	409	118	..
Colombia	546	1,440	195
Peru	44,223	55,176	6,096
U. of So. Africa	41,575	44,208	3,317
Australia	30,938	31,043	..
Philippines	2,635	2,222	182
Korea	..	420	..
Other countries	65	215	32
Base bullion (cont.)	..	31	..
Canada	..	31	..
Pigs and bars	264,149	262,005	40,630
Canada	34,452	16,220	1,739
Mexico	93,368	77,542	9,660
Peru	24,512	33,140	5,100
Belgium	231	1,206	..
Denmark	2,295	1,388	..
France	..	661	..
Germany	496	168	..
Spain	10,649	6,698	28
United Kingdom	47	115	..
Yugoslavia	35,659	38,655	..
Algeria	2,207	353	..
French Morocco	5,594	5,075	..
Australia	54,530	80,673	24,103
Other countries	109	111	..
Total Imports:			
Ore, base bullion, ref.	441,628	458,549	56,095
Lead scrap, dross, etc. (cont.)	20,580	20,738	323
Antimonial lead & type-metal	14,580	9,531	692
Lead content thereof	13,213	8,512	674

U. S. Zinc Imports

(A.B.M.S.) (Bureau of the Census)
(In tons of 2,000 lbs.)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Dec. 1956
Zinc ore (content)	478,044	525,795	45,425
Canada	173,157	177,087	17,970
Mexico	186,461	193,007	16,260
Cuba	3,704	1,130	120
Guatemala	8,353	11,903	473
Honduras	1,433	2,291	161
Bolivia	1,833	7,293	616
Colombia	142	204	29
Chile	4,858	346	264
Peru	83,915	98,541	6,616
U. of So. Africa	5,050	13,399	2,518
Australia	5,630	17,764	..
Philippines	465	828	22
Other countries	3,043	2,002	376
Zinc blocks, pigs, etc.	195,695	244,974	46,452
Canada	113,401	116,875	16,120
Mexico	19,430	17,154	2,930
Peru	9,767	6,589	299
Austria	..	2,294	110
Belgium	17,750	32,351	9,425
Germany (West)	6,643	15,285	5,169
Italy	6,189	13,487	2,403
Netherlands	1,078	5,965	2,426
Norway	504	..	..
Trieste	..	110	..
United Kingdom	79	610	..
Yugoslavia	..	500	..
Belgian Congo	15,227	17,356	2,271
French Moroco	1,264	..	..
Rhodesia	281	560	560
Australia	4,032	8,267	1,904
Japan	..	4,883	1,827
Other countries	..	2,688	1,008
Total Imports:			
Zinc ore, blocks, pigs	673,739	770,769	91,877
Dross and skimmings	108	455	57
Old and worn out	177	153	31

Comparative Metal Prices

	Av. 1939	OPA Av. 1946	1957 Mar. 15
Copper Domestic (Electro., Del. Valley)	11.20	14.375	32.00-34.00
Lead (N. Y.)	5.05	8.25	16.00
P. W. Zinc (E. St. Louis, f. o. b.)	5.05	5.05	13.50
New York, del	..	..	14.00
Tin, Spot Straits, N. Y.	..	..	100.25
Aluminum Ingot 99%+	20.00	15.00	27.10
Antimony (R.M.M. brand, f. o. b. Laredo)	12.36	14.50	35.00

World Production of Copper

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States (a)	Canada (b)	Mexico (crude) (c)	Chile (d)	Peru (d)	Fed. Rep. of Germany (e)	Norway (f)	United Kingdom (g-h)	Yugo-slavia (c)	India (f-h)	Japan (e)	Turkey (f)	Aus-tralia (c)	Northern Rho-desia (c)	Union of South Africa (d)
1951															
Total	964,589	269,971	60,511	396,937	25,495	234,647	.....	.....	.....	....	100,254	....	16,984	349,667	36,104
1952															
Total	961,886	258,868	60,874	422,493	22,640	206,747	11,206	163,968	36,176	7,009	104,060	2,546	21,119	336,883	37,459
1953															
Total	957,318	253,652	63,380	371,742	25,803	233,330	13,306	108,604	34,381	5,709	100,381	25,641	37,080	382,884	38,341
1954															
Total	863,721	302,984	59,030	372,814	29,233	258,259	14.205	152,858	33,394	8,274	117.371	27,727	42,241	386,577	43,153
1955															
Nov.	94,287	27,392	5,999	40,699	2,554	24,143	1,308	12,728	2,544	782	11,868	3,010	4,826	28,749	3,844
Dec.	93,186	32,850	5,601	19,282	2,610	22,973	1,010	13,871	2,794	814	11,872	2,301	1,804	31,676	4,060
Total	1,036,702	326,599	61,583	447,288	35,478	286,805	14,876	138,271	31,151	8,432	124,908	26,313	41,935	350,302	47,176
1956															
Jan.	96,732	30,063	6,040	30,475	593	23,826	1,329	14,597	2,436	456	11,133	1,893	3,985	32,887	3,808
Feb.	89,326	26,867	4,965	37,420	2,492	21,106	1,259	11,437	1,872	792	11,029	2,477	4,331	33,545	2,924
Mar.	102,459	31,659	7,107	38,356	2,500	23,838	1,322	12,281	2,313	821	10,390	3,074	5,991	32,535	3,773
Apr.	98,578	27,804	6,436	39,731	2,474	22,593	1,402	8,154	1,660	761	9,927	2,355	5,443	30,789	3,105
May	101,422	29,422	5,801	39,954	2,612	23,134	1 4 5	10,217	3,103	755	11,923	2,443	4,477	33,577	4,835
June	98,496	29,097	5,614	36,812	2,412	23,920	1,413	9,715	3,018	687	12,490	2,628	4,461	33,640	4.461
July	84,787	31,141	5,109	40,880	2,602	24,383	1,186	12,223	3,197	740	12,570	1,044	4,589	33,279	3,090
Aug.	91,282	28,719	5,357	44,202	2,623	24,006	1,251	6,733	3,323	782	12,443	1,584	4,841	33,720	4,715
Sept.	88,659	31,196	5,609	41,475	..	24,022	1,510	11,281	3,025	785	12,015	2,298	4,207	26,917	4,307
Oct.	95,109	29,977	6,488	47,346	....	24,405	1,733	11,127	3,020	757	12,477	2,754	4,497	42,381	4,868
Nov.	90,373	29,837	5,871	46,407	..	22,156	1,344	11,426	2,733	702	10,648	2,717	5,252	38,800	.....
Dec.	92,231	30,422	5,521	44,911	838	21,939	....	9,174	.....	786	11,993	..	4,707	38,654	.....
1957															
Jan.	94,944	.....	5,592	...	2,276	...	....	...	...	...	...	...	...	36,157	.....

(a) Reported by Copper Institute. Crude, "recoverable contents of mine production or smelter production or shipments, and custom intake". Does not include intake of scrap nor of imported ore except that received from Cuba and Philippines. (b) Blister copper plus recoverable copper in concentrates, matte, etc., exported. (c) Crude copper, i. e., copper content of blister or converter copper as originally produced in the several countries, although some of it may be refined at home; e. g., in Rhodesia. (d) Blister and/or refined. (e) Refined. There are quantities of scrap included in the electrolytic production in addition to that reported, tonnage of which is not obtainable. (f) Smelter production. (g) Refinery production from imported blister only. (h) British Bureau of Non-Ferrous Metal Statistics. *Refined.

World Production of Refined Lead

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States	Canada	Mexico	Peru	Belgium	France	Fed. Rep. of Germany	Italy	Spain	Yugo-slavia	Japan	Aus-tralia (a)	French Morocco	Tunisia	Rho-desia	Total
1951																
Total	486,874	162,712	219,352	48,824	77,873	53,831	170,766	39,683	45,460	.....	18,516	217,301	20,287	25,476	15,646	1,602,601
1952																
Total	532,778	183,389	248,551	53,536	83,139	59,607	152,751	38,504	46,060	74,053	20,882	217,293	31,224	28,264	14,112	1,783,648
1953																
Total	533,883	166,356	225,075	46,520	84,162	60,887	164,077	40,786	53,799	78,038	25,513	241,419	29,970	30,397	12,891	1,813,773
1954																
Total	551,618	166,379	231,595	63,735	79,260	71,083	162.773	41,150	62,475	73,555	37,612	260,424	29,417	30,015	16,800	1,877,841
1955																
Total	547,153	148,811	221,138	67,303	91,241	73,251	162,397	46,086	67,509	83,347	40,912	254,558	28,870	28,620	17,976	1,893,014
Nov.	52,623	12,587	17,576	5,473	8,468	5,891	17,503	3,741	6,133	7,799	3,785	18,820	....	2,535	1,456	164,890
Dec.	50,448	12,553	18,637	7,038	8,030	6,730	16,806	4,031	5,267	7,208	3,946	21,113	1,414	3,790	1,456	168,467
1956																
Jan.	51,306	12.179	17,587	1,730	8,731	7,014	16,218	3,722	5,399	6,210	3,929	24,196	4,967	2,070	1,456	167,374
Feb.	49,475	11,469	16,510	6,497	9,446	6,241	15,743	3,688	5,202	4,708	4,239	16,392	4,572	1,307	1,232	157,173
Mar.	54,174	12,438	17,376	6,142	9,338	6,883	14,562	3,164	5,319	7,187	4,009	19,535	3,505	2,500	1,680	167,740
Apr.	52,976	11,554	15,186	6,790	8,650	6.276	14,398	3,799	6,118	7,159	4,136	17,407	2,056	2,273	1,456	161,389
May	47,961	11,990	17,611	6,970	9,188	6 814	14.022	4,511	5,660	5,786	4,142	15,984	798	2,372	1,456	156,551
June	47,367	11,591	18,091	6,779	9,481	6,704	14,302	3,100	4,767	7,286	3,972	19,664	....	2,064	1,456	157,830
July	48,479	12,374	18,515	6,415	9,965	6,377	12,165	3 887	5,195	7,827	4,202	27,935	2,876	1,841	1,476	170,426
Aug.	48,404	12,196	18,890	6,192	9,372	1,896	11,586	2,440	4,724	7,546	4,126	19.757	4,151	1,933	1,400	155,665
Sept.	53.530	12.706	19.567	6.378	9.213	6.071	13.671	2.833	5.962	6.182	4.614	23.674	3.630	2.970	1.344	172.788
Oct.	54,815	13.923	20.169	2.237	9,243	7.212	16.873	4.630	6,022	8,237	4.271	26.243	2.490	2.389	1.400	181,423
Nov.	50,744	..	17.934	..	..	7,883	17.679	3.319	5.343	7,632	4.484	23.220	..	2,180	1.232	..
Dec.	54.062	..	17.088	5,787	..	1.797	17.094	..	..	....	4.751	..	1.948	2.724	1.344	.....
1957																
Jan.	50,854		19.212	5.676	..	....	....	..	....	....	....	....	....	..	1 344	.....

(a) Production credited to Australia includes lead refined in England from Australian base bullion.

World Production of Slab Zinc

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States (a)	Can. (b)	Mexico	Peru (b-c)	Belgium	France (a)	Fed. Rep. of Germany	Great Britain	Italy	Nether-lands	Norway (b)	Spain	Yugo-slovia	Japan (a)	Aus-tralia (b)	Rho-desia (b)	Total (d)
1951																	
Total	931,833	218,548	57,990	1,003	220,479	82,184	155,024	78,101	52,058	24,924	44,971	23,444	....	62,109	88,103	25,301	2,065,216
1952																	
Total	961,430	223,140	61,456	5,491	205,909	88,255	162,272	76,981	60,438	28,555	43,061	23,329	15,943	77,203	97,931	25,687	2,141,089
1953																	
Total	971,191	247,707	59,589	9,819	213,215	89,218	163,430	81,436	65,730	27,721	42,566	24,152	16,037	86,833	101,003	28,370	2,228,917
1954																	
Total	868,242	213,810	60,477	16,982	234,896	122,248	184,806	90,987	74,356	28,686	48,768	25,109	15,040	112,292	117,066	29,736	2,243,501
1955																	
Nov.	87,616	21,398	5,066	818	19,244	9,848	15,708	7,442	6,183	2,846	4,501	2,185	1,142	11,600	9,860	2,576	210,265
Dec.	92,578	21,135	5,252	....	20,079	10,332	17,061	9,316	6,420	2,886	4,432	2,258	1,147	11,654	9,972	2,632	220,043
Total	1,031,018	257,008	61,879	18,943	233,623	123,623	197,024	90,917	77,761	31,202	49,724	26,244	15,175	122,965	113,221	31,248	2,533,879
1956																	
Jan.	90,313	21,696	5,279	....	20,359	11,756	16,827	6,768	6,315	2,786	4,345	2,219	1,146	15,928	9,753	2,632	222,280
Feb.	86,329	20,356	4,949	963	20,589	9,911	15,598	7,684	5,799	2,777	3,961	2,038	1,144	10,337	8,982	2,688	208,693
Mar.	91,690	22,010	5,333	1,980	20,710	9,491	16,839	9,351	6,355	2,853	4,331	2,166	1.236	11,702	9,572	2,688	224,327
Apr.	88,664	21,339	5,207	1,220	20,687	10,819	16,689	7,382	6,613	2,693	4,002	2,172	1,222	13,806	9,243	2 688	218,303
May	81,238	21,790	5,248	1,225	21,300	11,174	17,212	6,719	7,190	2,662	4,168	2,226	1,289	13,401	10,012	2,688	214,194
June	78,321	20,780	5,142	1,459	21,030	11,003	16,898	8,557	6,270	2,530	4,427	2,175	1,282	12,466	8,606	2,632	208,635
July	83,080	21,691	5,198	1,285	21,015	10,679	17,964	6,617	6,433	2,637	4,688	2,047	1,325	13,089	11,141	2,800	216,200
Aug.	89,549	21,354	5,154	1,427	20,996	10,846	17,633	6,925	6,995	2,543	4,826	1,915	1,420	12,385	10,032	2,464	221,801
Sept.	90,235	20,691	5,018	....	21,207	10,210	17,187	9,130	6,817	2,452	4,487	1,918	1,287	12,674	9,866	2,744	220,868
Oct.	93,493	21,412	5,257	..	21,153	8,871	17,428	6,773	7,334	2,718	4,743	2,110	1,244	13,497	10,171	2,800	.....
Nov.	91,808	20,470	5,060	...	....	9,257	16,851	6,443	7,037	2,727	4,538	2,087	1,414	12,718	9,810	2,716	.....
Dec.	98,234	22,012	5,291	889	....	10,088	17,835	8,135	7,249	2,745	4,654	...	..	12,563	....	2,856	.....
1957																	
Jan.	93,452	20,349	5,357	1,560	...	...	6,360	...	...	...	4,424	...	....	...	...	2,856	...

(a) Partially electrolytic. (b) Entirely electrolytic. (c) Beginning 1954 both electrolytic and electrothemic. (d) The above totals omits production in Russia, Czechoslovakia, Poland and in Argentina.

U. K. Virgin Copper Stocks

(In long tons)

British Bureau of Non-Ferrous Metal Statistics

At start of:	1954	1955	1956
Jan.	55,344	61,480	76,197
Feb.	60,402	62,771	79,377
Mar.	60,084	70,185	71,634
Apr.	47,258	67,566	73,776
May	60,118	60,767	76,481
June	65,314	58,546	71,713
July	68,037	64,256	76,188
Aug.	67,307	99,628	68,197
Sept.	77,323	107,261	72,069
Oct.	72,266	93,681	62,327
Nov.	61,484	75,533	58,893
Dec.	61,673	77,749	55,838

U. K. Refined Lead Stocks

British Bureau of Non-Ferrous Metal Statistics

(In long tons)

At start of:	1954	1955	1956
Jan.	26,887	31,173	40,987
Feb.	32,653	32,274	34,326
Mar.	30,697	39,461	29,693
Apr.	28,312	37,587	33,974
May	30,005	45,226	29,479
June	29,793	38,760	30,537
July	30,437	30,816	37,088
Aug.	29,492	32,270	35,432
Sept.	26,298	48,036	35,792
Oct.	28,958	42,912	39,391
Nov.	22,269	42,061	32,662
Dec.	26,937	38,410	32,025

U. K. Stocks of Zinc

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

At start of:	Virgin Zinc		Zinc. Conc.	
	1955	1956	1955	1956
Jan.	49,962	49,962	47,200	54,447
Feb.	48,027	45,239	43,779	49,537
Mar.	45,679	44,288	44,176	48,667
Apr.	49,301	49,194	51,603	40,502
May	53,573	49,129	47,741	36,524
June	50,447	47,226	47,791	40,136
July	48,227	47,664	47,399	40,763
Aug.	54,562	49,169	50,649	47,972
Sept.	60,935	50,978	55,350	55,354
Oct.	60,800	47,364	55,234	54,376
Nov.	54,679	46,364	60,065	53,223
Dec.	50,678	44,816	58,414	53,274

U. K. Copper Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Jan. 1957
(Gross Weight)			
Copper and copper alloys	411,520	403,097	43,146
U. of S. Africa	1,464	1,641	...
N. Rhodesia	216,235	233,161	24,786
Canada	65,831	60,502	5,487
Belgium	6,898	4,925	508
Germany, W.	7,881	1,807	11
Norway	2,823	491	200
United States	29,491	9,768	5,532
Chile	60,497	76,704	5,699
Peru	5,675	2,642	...
Turkey	‡	‡	400
Belg. Congo	5,075	7,700	250
Other countries	9,650	3,756	273
Of which:			
Electrolytic	255,344	259,129	26,699
Other refined	31,079	34,481	2,800
Blister or rough	121,854	166,724	13,599
Wrought and alloys	3,243	2,763	48
Total	411,520	403,097	43,146

‡ Included in Other countries, if any.

Copper Consumption in United Kingdom

British Bureau of Non-Ferrous Metal Statistics

(In tons of 2,240 pounds)

	Unalloyed	Alloyed*	Total	Virgin	Scrap
1953 Total	243,717	192,337	447,260	322,311	124,949
1954 Total	328,149	251,989	580,138	448,413	131,725
1955					
October	36,309	25,276	61,585	47,519	14,066
November	35,791	25,854	61,645	48,690	12,955
December	32,953	23,108	56,061	41,130	14,931
Total	377,576	281,953	659,529	496,467	163,062
1956					
January	34,567	24,461	59,028	45,676	13,352
February	33,213	24,163	57,376	40,934	16,442
March	32,903	24,366	57,269	43,913	13,356
April	27,489	21,029	48,518	36,418	12,100
May	29,845	22,295	52,140	41,747	10,393
June	33,774	21,810	55,584	43,622	11,962
July	31,752	19,316	51,086	39,149	11,919
August	24,426	14,434	38,860	30,065	8,795
September	35,203	19,584	54,787	45,807	8,980
October	36,824	21,275	58,099	47,814	10,285
November	38,244	21,142	59,386	47,144	12,242
December	29,927	17,437	47,364	38,505	8,859
Total	388,167	251,312	639,479	500,794	138,685

*Includes copper sulphate effective October, 1954.

U. K. Zinc Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Jan. 1957
(Gross Weight)			
Zinc ore and concentrates	200,252	181,605	30,193
Zinc conc.	105,624	92,435	†
Australia	74,591	62,961	...
Canada	7,316	5,638	...
Burma	19,581	1,368	...
Italy	4,136	8,757	...
Yugoslavia	...	1,560	...
N. Rhodesia	...	8,470	...
Turkey	...	3,681	...
Zinc and zinc alloys	161,586	127,269	10,017
N. Rhodesia	5,778	4,171	150
Australia	10,595	7,789	...
Canada	90,885	56,677	4,791
Belgium	11,785	17,806	2,712
Germany, W.	5,017	2,993	151
Netherlands	2,601	2,949	85
Norway	730	850	...
United States	9,265	7,420	300
Other countries	24,930	26,614	1,828
Of which:			
Zinc or spelter, unwrought in ingots, blocks, bars, slabs and cakes	160,427	126,742	10,017
Other	1,159	527	...
Total	161,586	127,269	10,017

† Not available.

Zinc Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in pigs, bars, etc.; metric tons except where otherwise noted.

	1956		
	Oct.	Nov.	Dec.
IMPORTS			
U. S. (s.t.)	31,078	27,580	46,452
Denmark	720	229	596
France	675	245	1,071
Germany, W.†	3,666	4,072	...
Italy	498	...	..
Netherlands	467	1,275	...
Sweden	2,533	2,698	2,060
Switzerland†	1,736	1,159	2,208
U. K. (l.t.)	10,267	12,865	8,175
India* (l.t.)	3,067	1,690	...
EXPORTS			
U. S. (s.t.)	952	1,091	413
Canada (s.t.)	20,791	21,411	16,125
Denmark	16	...	68
France	24	...	52
Germany, W.†	4,709	4,318	...
Italy	1,565	...	...
Netherlands	1,340	684	...
Norway	3,796	3,128	...
Switzerland†	445	322	484
U. K.‡ (l.t.)	345	519	318
Northern Rhodesia* (l.t.)	2,461	2,689	2,900

† Includes scrap.
‡ Includes manufactures.
* British Bureau of Non-Ferrous Metal Statistics.

United Kingdom Tin Statistics

(British Bureau of Non-Ferrous Metal Statistics)

	Tin Content of Tin in Ore			Tin Metal				
	Imports	Production*	Stock at end of period*	Imports	Production*	Consumption	Exports & Re-exports	Stock at end of period
1954 Total	**27,494**	**940**	**2,473**	**2,404**	**27,475**	**21,389**	**8,585**	**4,347**
1955								
September	1,739	97	1,800	15	2,283	1,920	981	3,053
October	**2,245**	**90**	**2,349**	**35**	**2,197**	**1,866**	**1,097**	**2,363**
November	**3,034**	**86**	**2,878**	**436**	**2,421**	**2,081**	**577**	**2,935**
December	**1,679**	**71**	**2,181**	**155**	**2,233**	**1,689**	**528**	**2,999**
1955 Total	**27,084**	**1,034**	**2,181**	**1,227**	**27,241**	**22,390**	**8,924**	**2,999**
1956								
January	**1,548**	**110**	**1,194**	**14**	**2,493**	**1,881**	**704**	**3,236**
February	**2,695**	**88**	**2,384**	**129**	**1,769**	**2,082**	**793**	**2,671**
March	**2,526**	**94**	**2,705**	**730**	**2,452**	**1,825**	**237**	**3,804**
April	2,045	76	2,341	155	1,924	1,692	475	3,638
May	1,650	81	1,861	39	2,455	2,301	1,013	3,438
June	1,647	74	1,240	69	2,660	1,803	457	3,424
July	3,100	111	2,246	173	2,082	1,854	405	3,460
August	2,691	48	....	20	1,931	1,577	583	3,784
September	934	....	....	247	2,575	1,903	958	3,274

*As reported by International Tin Study Group. Production of Tin Metal includes production from imported scrap and residues refined on toll. Stocks exclude strategic stock but include official warehouse stocks.

Canada's Copper Output

(Dominion Bureau of Statistics)

(Refined Copper)
(In Tons)

	1953	1954	1955	1956
Jan.	21,830	15,001	22,600	26,653
Feb.	21,075	13,954	21,455	26,229
Mar.	22,432	21,075	25,083	26,750
Apr.	21,747	20,412	24,077	26,617
May	20,179	23,012	23,840	27,626
June	18,384	23,344	21,890	27,122
July	19,996	21,582	21,185	27,250
Aug.	19,886	22,000	26,184	29,219
Sept.	16,777	22,684	24,752	27,950
Oct.	17,675	21,661	25,546	29,696
Nov.	17,101	22,981	25,213	27,346
Dec.	18,703	24,935	27,172	28,716
Year	235,787	252,643	288,987	331,174

Canada's Lead Exports

(Dominion Bureau of Statistics)

(In Pigs)
(In Tons)

	1953	1954	1955	1956
Jan.	11,212	6,170	5,500	4,888
Feb.	8,710	7,560	11,882	3,856
Mar.	14,943	11,092	10,318	4,007
Apr.	14,765	9,606	11,967	7,636
May	7,039	11,483	6,416	7,214
June	13,434	12,018	9,897	6,632
July	1,357	13,152	8,341	9,696
Aug.	8,869	8,646	4,884	4,713
Sept.	3,903	10,045	5,538	9,908
Oct.	7,532	8,005	8,053	9,072
Nov.	6,581	10,817	4,622	9,227
Dec.	4,354	7,815	5,286	2,734
Year	102,879	116,406	92,407	79,633

Canada's Silver Exports

(Dominion Bureau of Statistics)

(In ores and concentrates)
(Fine Ounces)

	1954	1955	1956
Jan.	547,951	429,704	435,047
Feb.	567,225	457,261	196,803
Mar.	849,502	411,597	328,857
Apr.	572,059	493,578	348,838
May	660,724	445,054	447,710
June	682,906	592,238	495,742
July	1,210,045	285,350	686,209
Aug.	953,379	644,932	1,080,301
Sept.	605,188	636,992	481,042
Oct.	612,874	684,301	731,099
Nov.	606,274	387,147	669,285
Dec.	804,213	405,719	1,023,481
Year	8,672,340	5,873,873	6,924,414

Canada's Copper Exports

(Dominion Bureau of Statistics)

(Ingots, bars, slabs and billets)
(In Tons)

	1953	1954	1955	1956
Jan.	7,668	9,081	11,078	15,981
Feb.	16,411	8,385	12,897	11,041
Mar.	10,578	11,671	12,423	12,276
Apr.	11,153	11,218	10,321	14,476
May	14,726	18,407	10,911	12,851
June	15,053	14,877	13,387	10,985
July	13,939	15,467	12,674	13,599
Aug.	7,272	14,158	13,219	14,710
Sept.	8,139	14,069	13,479	17,268
Oct.	8,957	11,528	14,208	13,896
Nov.	9,062	13,372	14,545	19,130
Dec.	9,036	13,897	14,057	18,630
Year	131,994	156,130	153,199	174,843

Canada's Zinc Output

(Dominion Bureau of Statistics)

(Refined Zinc)
(In Tons)

	1953	1954	1955	1956
Jan.	18,370	17,155	22,028	21,696
Feb.	18,677	15,199	19,865	20,356
Mar.	20,693	16,550	22,215	22,010
Apr.	20,003	16,249	21,301	21,339
May	20,090	16,530	21,599	21,790
June	20,589	17,017	20,565	20,780
July	21,595	17,917	21,769	21,691
Aug.	21,703	18,755	22,029	21,354
Sept.	21,157	18,023	20,898	20,691
Oct.	21,888	18,871	22,206	21,412
Nov.	21,051	19,662	21,398	20,470
Dec.	21,899	21,922	21,135	22,012
Year	247,707	213,810	257,008	255,601

Canada's Silver Output

(Dominion Bureau of Statistics)

(In Ounces)

	1954	1955	1956
Jan.	2,603,593	2,182,386	2,280,575
Feb.	2,068,740	1,960,506	2,094,467
Mar.	2,352,392	2,413,591	2,296,648
Apr.	2,745,615	2,304,287	1,759,384
May	2,564,919	2,235,620	2,463,374
June	2,769,694	2,461,675	2,494,748
July	2,717,859	2,385,654	2,267,271
Aug.	2,840,385	2,480,607	2,315,312
Sept.	2,804,384	2,386,385	2,517,451
Oct.	2,461,823	2,371,890	2,379,162
Nov.	2,823,719	2,088,991	2,429,547
Dec.	2,364,826	2,388,627	2,357,202
Year	31,117,949	27,696,319	27,655,141

Canada's Lead Output

(Dominion Bureau of Statistics)

(Recoverable Lead)*
(In Tons)

	1953	1954	1955	1956
Jan.	19,502	17,716	18,959	16,002
Feb.	16,888	16,863	15,018	14,344
Mar.	14,183	17,104	19,113	16,857
Apr.	18,640	19,452	17,889	11,573
May	16,120	19,953	16,808	15,446
June	15,302	18,988	17,800	18,145
July	11,969	19,164	16,650	15,841
Aug.	13,864	18,237	16,676	16,104
Sept.	14,335	17,066	15,972	15,760
Oct.	16,327	16,569	13,658	16,725
Nov.	19,433	18,365	15,182	14,865
Dec.	19,273	19,093	17,857	16,056
Year	195,836	219,280	201,583	188,971

*New base bullion from Canadian ores plus recoverable lead in ores or concentrates shipped for export.

Canada's Zinc Exports

(Dominion Bureau of Statistics)

(Slabs in Tons)

	1953	1954	1955	1956
Jan.	17,478	16,625	22,181	15,550
Feb.	13,580	11,328	25,556	11,757
Mar.	18,307	18,199	20,178	8,822
Apr.	17,068	17,926	21,018	14,317
May	15,595	13,926	14,820	11,357
June	14,919	15,654	19,581	15,296
July	10,068	27,582	13,522	15,499
Aug.	8,591	14,934	16,581	13,070
Sept.	9,423	17,298	11,793	19,732
Oct.	11,862	13,064	19,836	20,792
Nov.	10,685	16,224	14,164	21,411
Dec.	10,809	23,277	14,607	16,125
Year	158,388	206,037	213,837	183,728

Canada's Nickel Output

(Dominion Bureau of Statistics)

(In Tons)

	1953	1954	1955	1956
Jan.	12,517	12,765	14,387	14,985
Feb.	10,662	11,874	13,375	14,997
Mar.	12,268	13,619	15,544	15,504
Apr.	11,841	13,015	15,011	14,431
May	11,610	13,458	15,352	15,203
June	11,687	13,269	14,835	14,492
July	11,801	12,901	14,530	15,125
Aug.	11,911	13,428	14,825	14,852
Sept.	12,031	13,521	13,734	14,530
Oct.	12,469	14,323	14,411	15,762
Nov.	12,764	14,159	14,290	15,062
Dec.	12,122	14,947	14,881	14,824
Year	143,693	161,279	175,173	178,767

Canadian Copper Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 lbs.)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Dec. 1956
Ore, matte, regulus, etc. (content)	41,564	40,993	4,666
United States	26,883	25,354	3,139
Belgium	400	398	...
Germany, W.	1,827	692	...
Norway	11,325	13,373	1,404
U. Kingdom	1,129	1,175	123
Pakistan	...	1	...
Ingots, bars, billets, anodes	153,197	174,842	18,630
United States	67,068	96,746	9,392
Brazil	495	256	220
Denmark	168	...	...
France	8,957	9,860	1,008
Germany, W.	937	...	...
Italy	116	...	...
Netherlands	198	...	...
Switzerland	308	...	...
U. Kingdom	69,199	63,989	8,008
Australia	3,994	...	...
India	1,724	3,973	...
Other countries	33	18	2
Total Exports:			
Crude & ref.	194,761	215,835	23,296
Old and scrap	18,293	14,593	1,150
Rods, strips, sheet and tubing	19,161	11,916	516

Canadian Zinc Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 lbs.)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Dec. 1956
Ore (zinc cont.)	190,582	199,314	17,491
United States	168,067	173,325	17,491
Belgium	7,487	7,376	....
France	4,613	3,948	....
Norway	2,170	8,354	....
U. Kingdom	8,245	6,311	....
Slab zinc	213,837	183,727	16,125
United States	113,308	115,895	14,025
Argentina	....	1,673	....
Brazil	55	16	....
Chile	73	....	....
Netherlands	112	....	....
U. Kingdom	95,601	63,838	2,100
Korea	115	378	....
Hong Kong	....	56	....
Philippines	....	661	....
Taiwan	102	71	....
India	3,259	1,120	....
Iran	165	....	....
Pakistan	1,026	....	....
Other countries	21	19	....
Total Exports:			
Ore and slabs	404,419	383,041	33,616
Zinc scrap, dross, ashes	5,463	5,467	387
United States	1,206	684	110
Belgium	2,293	3,001	116
France	....	158	....
Germany, W.	545	236	86
Netherlands	1,260	1,220	75
Japan	129	....	....
Italy	30	53	....
India	....	115	....

Canada's Nickel Exports

(Dominion Bureau of Statistics)

(Refined, in oxides, matte, etc.)
(In Tons)

	1955	1956
January	14,421	15,121
February	13,915	13,940
March	13,564	16,219
April	16,083	14,448
May	14,761	14,729
June	16,296	16,403
July	13,929	11,079
August	14,861	18,470
September	14,638	13,849
October	13,589	12,800
November	13,073	14,084
December	14,749	15,694
Year	173,879	176,837

Copper Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in ingots, slabs, etc.; metric tons except where otherwise noted:

	1956 Sept.	Oct.	Nov.
IMPORTS			
U. S. (blist., s.t.)	26,873	36,210	18,803
(ore, etc., s.t.)	6,896	11,527	7,526
(ref., s.t.)	13,697	15,016	14,344
Denmark	63	605	292
France (crude)	813	10	813
(refined)	16,682	13,024	9,745
Italy	9,916	...	...
Germany, W.	17,654	17,383	...
Netherlands	925	2,071	...
Norway	33	522	...
Sweden	2,608	5,524	...
Switzerland	2,189	2,695	3,845
U. K. (s.t.)	26,041	40,501	32,804
India* (ref., l.t.)	3,307	...	...
EXPORTS			
U. S. (ore and unref., s.t.)	325	951	941
(ref., s.t.)	22,025	21,213	17,836
Canada (ref., s.t.)	17,268	13,896	...
Finland‡	2	232	...
Germany, W.	5,506	3,771	...
Norway	1,242	1,445	...
Sweden	1,102	653	...
U. K. (l.t.)	2,100	4,206	3,667
Turkey†	1,000	...	...
No. Rhodesia (ref. & blist., l.t.)*	32,437	29,493	33,778

† Includes copper alloys.
‡ Includes old.
* British Bureau of Non-Ferrous Metal Statistics.

U. K. Copper Exports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Dec. 1956
(Gross Weight)			
Copper unwrought, ingots, blocks, slabs, bars, etc.	15,392	32,616	4,442
Plates, sheets, rods, etc.	17,484	19,148	2,259
Wire (including uninsulated electric wire)	31,454	57,297	6,808
Tubes	6,643	10,520	774
Other copper worked (incl. pipe fittings)	1,343	1,494	99
Total	72,316	121,075	14,382

Canadian Lead Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 lbs.)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Dec. 1956
Ore (lead cont.)	58,162	49,973	4,568
United States	31,221	29,996	4,568
Belgium	16,522	12,154	...
Germany, W.	10,419	7,823	....
Refined lead	92,703	79,632	2,733
United States	34,287	15,809	1,318
Cuba	1	1	...
Uruguay	...	431	....
Venezuela	85	93	...
Belgium	66	...	...
Norway	56	...	....
U. Kingdom	56,869	50,281	65
Japan	1,274	12,540	1,132
Taiwan	14	113	...
Other countries	51	136	...
Brazil	...	237	220
Total Exports:			
Ore & refined	150,865	129,605	7,301
Pipe & tubing	22	20	2
Lead scrap	627	162	4

French Copper Imports

(A.B.M.S.)

(In metric tons)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Dec. 1956
Ore (gross weight)	43	2,817	161
Algeria	.....	161	161
Morocco	43	2,656	.....
Crude copper for refining (blister, black & cement)	6,131	4,991	1
Belgium	.....	102	.....
Germany	.....	1	.....
United Kingdom	.....	10	.....
Belgian Congo	4,980	4,878	1
Union of S. Africa	1,128	.....	.....
Morocco	23	.....	.....
Refined	165,064	164,787	15,878
United States	53,531	53,817	3,152
Canada	8,470	8,412	1,134
Chile	150	2,692	292
Peru	277	3	.....
Belgium	48,626	44,634	4,162
Germany (West)	1,906	6,497	1,444
Norway	576	1,240	60
Sweden	117	1,336	457
United Kingdom	987	2,531	602
Turkey	95	.....	.....
Belgian Congo	37,019	29,887	3,503
Union of S. Africa	1,123	526	5
Rhodesia-Nyassaland	10,545	13,141	1,066
Japan	1,598	.....	.....
Other countries	44	71	1

French Zinc Imports

(American Bureau of Metal Statistics)
(In Metric Tons)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Dec. 1956
Ore (gross weight)	290,133	289,985	12,458
Canada	6,167	11,603	..
Guatemala	999	...	..
Bolivia	920	...	..
Peru	35,874	16,156	537
Austria	...	263	..
Belgium	3,637	1,117	..
Finland	2,997	4,550	...
Germany (West)	2,637	5,531	...
Greece	6,379	7,631	530
Italy	14,118	20,298	545
Netherlands	...	304	...
Norway	1,005	669	...
Spain	41,644	40,792	3,130
Yugoslavia	30,549	13,885	2,000
Algeria	48,888	52,185	1,540
Morocco	73,894	79,736	4,176
Tunisia	10,053	10,985	...
Belgian Congo	8,757	8,633	..
Australia	1,615	15,089	..
Burma	...	520	..
Other countries	...	38	...
Slabs, bars, blocks, etc.	14,923	10,381	1,071
Mexico	...	229	24
Belgium	13,480	8,936	997
Germany (West)	100	551	...
Italy	791	460	...
Netherlands	280	...	...
Norway	...	50	..
Russia	...	50	50
Switzerland	5	...	...
United Kingdom	12	2	..
Algeria	209	53	..
Tunisia	1	...	...
Rhodesia	42	...	..
Australia	3	...	...
China	...	50	...

French Metal Exports

(American Bureau of Metal Statistics)
(In Metric Tons)

	Jan.-Dec. 1955	Jan.-Dec. 1956	Dec. 1956
Lead:			
Ore (gross weight)	1,128	279	16
Pig lead:			
Argentiferous	76	...	...
Non-argentiferous	13,740	6,852	142
Antimonial lead	550	557	56
Zinc:			
Slabs, bars, blocks, etc.	609	152	52
Copper:			
Crude copper for refining (blister, black & cement)	...	393	..

Nonferrous Castings

MONTHLY SHIPMENTS, BY TYPE OF METAL

(Bureau of Census — Thousands of Pounds)

	Aluminum	Copper	Magnesium	Zinc	Lead Die
1951 Total	515,131	1,197,443	30,825	487,996	25,936
1952 Total	518,979	1,009,910	34,857	408,353	20,941
1953 Total	658,022	990,496	34,517	521,253	20,444
1954 Total	607,764	834,557	25,572	474,741	18,396
1955					
July	55,033	65,816	1,920	47,928	1,684
August	64,864	87,206	2,176	62,677	1,904
September	67,170	89,600	2,478	62,030	1,924
October	72,197	91,192	2,302	71,689	1,789
November	75,065	90,345	2,325	75,099	1,896
December	75,275	88,287	2,255	70,950	1,817
Total	833,058	1,011,748	27,892	781,254	21,045
1956					
January	74,152	89,767	2,959	68,050	1,598
February	73,096	91,706	2,977	66,584	1,636
March	73,785	96,085	3,046	65,760	1,644
April	67,880	90,679	3,140	58,274	1,910
May	65,786	89,188	3,021	59,205	1,919
June	58,189	78,921	2,949	47,775	1,883
July	52,955	60,926	2,810	42,227	1,551
August	61,507	77,619	3,059	52,321	2,112
September	62,503	72,109	3,079	46,340	1,004
October	74,209	81,049	3,442	65,450	2,205
November	69,741	72,866	2,892	64,972	1,788
December	67,333	65,198	2,794	58,111	1,483
Total	801,136	966,473	36,168	88,069	20,734

Copper Castings Shipments

BY TYPE OF CASTING

(Bureau of Census) (Thousands of Pounds)

	Total	Sand	Permanent Mold	Die	All Other
1951 Total	1,197,443	1,075,437	69,883	12,516	39,607
1952 Total	1,009,910	910,862	63,865	8,259	26,924
1953 Total	990,496	888,369	61,316	10,077	30,734
1954 Total	834,557	751,804	48,849	6,480	27,394
1955					
June	90,476	80,869	5,840	739	3,028
July	65,816	59,138	3,998	691	1,989
August	87,206	77,721	5,322	844	2,419
September	89,600	80,481	5,603	692	2,824
October	91,192	82,958	4,513	727	2,994
November	90,345	80,934	5,867	743	2,861
December	88,287	78,327	6,368	713	2,879
Total	1,011,748	907,852	63,041	8,541	31,408
1956					
January	89,767	80,116	6,135	799	2,717
February	91,706	82,244	5,888	727	2,847
March	96,085	85,894	6,299	782	3,110
April	90,679	81,333	5,835	722	2,789
May	89,188	80,155	5,398	751	2,854
June	78,921	70,260	5,052	755	2,854
July	60,926	55,027	3,193	506	2,200
August	77,619	70,479	3,805	904	2,431
September	72,109	64,887	3,930	929	2,363
October	81,049	73,058	4,104	1,120	2,767
November	72,866	65,022	4,114	1,057	2,673
December	65,198	57,929	3,769	971	2,529
Total	966,113	866,404	57,522	10,023	32,134

Nickel Averages

Electro, cathode sheets, 99.00%, f.o.b. refinery, duty included

(Cents per pound)

	1954	1955	1956	1957
Jan.	60.00	64.50	64.50	74.00
Feb.	60.00	64.50	64.50	74.00
Mar.	60.00	64.50	64.50	....
Apr.	60.00	64.50	64.50	....
May	60.00	64.50	64.50	....
June	60.00	64.50	64.50	....
July	60.00	64.50	64.50	....
Aug.	60.00	64.50	64.50	....
Sept.	60.00	64.50	64.50	....
Oct.	60.00	64.50	64.50	....
Nov.	60.98	64.50	64.50	....
Dec.	64.50	64.50	72.48	....
Av.	60.46	64.50	65.165	....

Platinum Averages

N. Y. MONTHLY QUOTATIONS

(Dollars per Troy Ounce)

	1954	1955	1956	1957
Jan.	91.40	81.00	106.30	101.92
Feb.	91.00	78.16	104.34	98.59
Mar.	87.88	78.00	104.23	....
Apr.	85.50	77.94	103.92	....
May	85.50	77.50	105.23	....
June	85.50	78.33	106.50	....
July	85.50	81.78	106.50	....
Aug.	85.00	84.59	105.76	....
Sept.	85.50	91.96	105.50	....
Oct.	83.62	94.60	104.85	....
Nov.	81.07	103.11	104.50	....
Dec.	80.64	106.58	104.50	....
Av.	85.72	86.12	105.18	....

Spot Straits Tin

(Straits, Open Market, N. Y.)

Monthly Average Prices

	1954	1955	1956	1957
Jan.	85.125	87.268	105.036	101.511
Feb.	85.16	90.836	100.803	101.132
Mar.	92.457	91.161	100.786	....
Apr.	96.298	91.48	99.268	....
May	93.51	91.41	96.994	....
June	94.24	93.68	94.589	....
July	96.55	97.08	96.143	....
Aug.	93.381	96.521	99.049	....
Sept.	93.536	96.607	103.809	....
Oct.	93.225	96.20	106.023	....
Nov.	91.176	97.987	110.921	....
Dec.	88.571	108.02	104.268	....
Aver.	91.935	94.85	101.474	....

Prompt Tin Prices

(Straits, Open Market, N. Y.)

Monthly Average Prices

(Cents per pound)

	1954	1955	1956	1957
Jan.	84.84	87.628	104.768	101.347
Feb.	85.04	90.75	100.586	100.257
Mar.	91.24	91.065	100.524	....
Apr.	96.238	91.41	99.145	....
May	93.51	91.38	96.853	....
June	94.24	93.64	94.488	....
July	96.55	96.825	96.131	....
Aug.	93.381	96.456	98.924	....
Sept.	93.536	96.256	103.559	....
Oct.	93.00	96.075	105.716	....
Nov.	91.099	97.882	110.329	....
Dec.	88.571	107.75	104.00	....
Av.	91.77	94.73	101.252	....

Quicksilver Averages

N. Y. Monthly Averages

Virgin, Dollars per 76-lb. Flask

	1954	1955	1956	1957
Jan.	189.60	324.68	277.88	256.00
Feb.	190.00	324.68	270.29	256.00
Mar.	201.63	322.61	261.40	....
Apr.	221.36	318.14	267.22	....
May	251.20	306.62	267.675	....
June	273.46	286.98	260.69	....
July	287.40	268.22	256.06	....
Aug.	290.71	255.18	256.00	....
Sept.	314.08	263.70	256.00	....
Oct.	329.50	279.02	255.92	....
Nov.	321.17	282.50	255.13	....
Dec.	319.96	282.27	256.00	....
Av.	265.84	292.90	261.71	....

Primary Aluminum Output, Shipments and Stocks

(U. S. Department of Interior)

	Stocks beginning of month short tons	Production short tons	—Sold or Used— Short tons	Calue f. o. b. plant	Stocks end of month short tons
1956					
January	15,020	140,394	135,598	$61,362,549	19,816
February	19,816	132,763	135,505	61,284,856	17,074
March	17,074	145,895	143,729	65,043,396	19,240
April	19,240	144,726	149,854	70,479,739	14,112
May	14,112	150,800	153,014	73,940,389	11,898
June	11,898	145,729	140,225	67,775,239	17,399
July	17,399	151,624	134,089	64,858,158	34,925
August	34,925	92,406	90,614	44,519,556	36,717
September	36,717	132,316	121,854	60,104,570	47,179
October	47,179	149,125	134,014	67,126,363	62,290
November	62,290	145,081	119,787	60,252,640	87,584
December	87,584	148,391	133,186	67,039,743	102,789

Aluminum Wrought Products

PRODUCERS' MONTHLY NET SHIPMENTS

(Bureau of Census — Thousands of Pounds)

	Total	Plate, Sheet, & Strip	Rolled Structural Shapes, Rod, Bar & Wire	Extruded Shapes Tube Blooms & Tubing	Powder, Flake, & Paste
1954 Total	2,088,439	1,165,090	357,229	518,070	46,255
1955					
May	234,309	125,176	30,979	75,371	2,813
June	255,701	136,420	35,306	74,792	3,035
July	210,222	113,305	27,070	62,918	2,379
August	250,036	141,400	29,413	67,904	3,039
September	244,135	134,240	32,973	67,407	2,926
October	248,806	138,328	30,554	71,456	2,926
November	245,526	137,109	31,656	67,798	2,658
December	242,993	138,592	31,802	64,159	1,837
Total	2,805,500	1,542,368	365,391	812,311	35,854
1956					
January	251,772	142,049	34,008	67,499	2,118
February	240,999	134,077	33,727	65,261	1,901
March	**232,767**	**128,432**	**30,972**	**63,482**	**1,947**
April	260,610	143,859	37,971	69,639	3,316
May	264,378	147,613	39,900	68,106	2,215
June	240,415	132,510	33,438	65,600	2,119
July	**247,895**	**139,571**	**35,346**	**64,249**	**2,736**
August	248,457	141,400	32,413	66,315	3,039
September	217,425	117,074	32,154	59,462	2,953
October	252,289	136,546	25,385	73,363	2,255
November	218,272	114,618	31,501	64,197	1,716
December	194,822	99,851	31,787	55,225	1,702
Total	2,870,101	1,577,601	398,602	782,398	28,017

Aluminum Castings Shipments

(Bureau of Census)

BY TYPE OF CASTING

(Thousands of Pounds)

	Total	Sand	Permanent Mold	Die	All Other
1951 Total	515,131	193,378	160,011	151,465	10,277
1952 Total	518,979	194,616	146,883	169,732	7,748
1953 Total	658,022	214,553	200,025	239,330	4,114
1954 Total	609,066	155,738	213,968	232,726	6,800
1955					
May	71,691	14,230	25,597	31,243	616
June	68,473	14,920	24,682	27,939	932
July	55,033	11,716	21,006	21,656	655
August	64,864	14,916	22,267	27,004	576
September	67,170	14,870	23,075	28,532	693
October	72,197	14,485	25,135	31,741	836
November	75,065	14,327	26,267	33,852	619
December	75,275	15,291	25,031	34,347	606
1955 Total	833,058	171,757	298,115	354,804	8,282
1956					
January	74,152	15,861	24,528	33,253	510
February	73,096	15,560	23,963	32,949	624
March	**73,785**	**16,597**	**22,816**	**33,965**	**407**
April	67,880	14,732	20,718	31,782	648
May	65,786	15,600	19,669	29,814	703
June	58,189	13,448	19,067	25,027	647
July	52,955	12,298	16,388	23,491	678
August	61,407	13,100	18,067	29,553	687
September	62,503	12,354	17,855	31,640	654
October	74,209	14,389	21,120	37,782	918
November	69,741	14,333	20,673	33,929	806
December	67,333	13,391	20,557	32,923	454
1956 Total	801,036	171,763	245,421	376,108	7,736

Virgin Aluminum

Virgin 99% Delivered

Monthly Average Prices

(Cents per pound)

	1954	1955	1956	1957
Jan.	21.50	22.90	24.40	27.10
Feb.	21.50	23.20	24.40	27.10
Mar.	21.50	23.20	24.60	....
Apr.	21.50	23.20	25.90	....
May	21.50	23.20	25.90	....
June	21.50	23.20	25.90	....
July	21.50	23.20	25.90	....
Aug.	22.12	24.26	26.70	....
Sept.	22.20	24.40	27.10	....
Oct.	22.20	24.40	27.10	....
Nov.	22.20	24.40	27.10	....
Dec.	22.20	24.40	27.10	....
Av.	21.785	23.655	26.008	....

Magnesium Wrought Products Shipments

(Bureau of Census)

(Thousands of Pounds)

	1953	1954	1955	1956
Jan.	1,313	972	1,776	2,118
Feb.	1,601	1,136	1,648	1,901
Mar.	1,601	1,136	1,947	1,946
Apr.	1,708	892	1,756	2,279
May	1,699	1,129	1,836	2,462
June	1,192	1,312	1,686	2,302
July	1,589	1,032	1,437	2,002
Aug.	1,433	1,111	1,742	2,523
Sept.	1,254	1,183	2,159	1,988
Oct.	1,409	1,002	1,667	861
Nov.	1,314	1,243	1,954	2,141
Dec.	919	1,673	1,577	2,452
Total	16,885	13,743	21,186	24,975

Cadmium Averages

N. Y. Monthly Averages

Cents per lb. in ton lots

	1954	1955	1956	1957
Jan.	200.00	170.00	170.00	170.00
Feb.	170.00	170.00	170.00	170.00
Mar.	170.00	170.00	170.00	.....
Apr.	170.00	170.00	170.00	.....
May	170.00	170.00	170.00	.....
June	170.00	170.00	170.00	.....
July	170.00	170.00	170.00	.....
Aug.	170.00	170.00	170.00	.....
Sept.	170.00	170.00	170.00	.....
Oct.	170.00	170.00	170.00	.....
Nov.	170.00	170.00	170.00	.....
Dec.	170.00	170.00	170.00	.....
Av.	172.50	170.00	170.00	.....

Steel Ingot Production

(American Iron and Steel Institute)

Period	Estimated Production — All Companies OPEN HEARTH Net tons	Per cent of capacity	BESSEMER Net tons	Per cent of capacity	ELECTRIC Net tons	Per cent of capacity	TOTAL Net tons	Per cent of capacity	Calculated weekly production, all companies (net tons)
1952 Total	82,846,439	87.2	3,523,677	65.5	6,797,923	82.6	93,168,039	85.8	1,782,097
1953 Total	100,473,823	97.9	3,855,705	83.2	7,280,191	71.1	111,609,719	94.9	2,140,578
1954 Total	**80,327,494**	**73.6**	**2,548,104**	**63.2**	**5,436,054**	**52.0**	**88,311,652**	**71.0**	**1,693,741**
1955									
November	9,141,244	100.8	306,674	77.9	799,480	89.9	10,247,398	99.0	2,388,671
December	9,390,000	100.5	292,000	72.0	786,000	85.8	10,468,000	98.1	2,368,000
Total	105,342,886	95.6	3,319,088	69.3	8,338,592	77.2	117,000,566	93.0	2,243,969
1956									
January	9,676,151	101.4	323,235	79.5	828,845	86.6	10,828,231	99.3	2,444,296
February	9,043,064	101.3	296,543	78.0	779,388	87.1	10,118,995	99.2	2,444,202
March	9,795,263	102.7	310,060	76.3	819,465	85.7	10,924,788	100.2	2,466,092
April	9,437,945	102.2	306,388	77.9	779,452	84.2	10,523,785	99.7	2,455,097
May	9,370,167	98.2	297,990	73.3	822,219	86.0	10,490,376	96.2	2,368,031
June	**8,665,044**	**93.9**	**282,846**	**71.9**	**773,546**	**83.6**	**9,721,436**	**92.1**	**2,266,039**
July	**1,330,151**	**13.9**	.....	...	**292,012**	**30.5**	**1,622,163**	**14.9**	**367,006**
August	7,213,274	75.6	189,564	46.6	719,759	75.3	8,122,597	74.5	1,833,543
September	9,342,796	101.2	286,978	72.9	792,885	85.7	10,422,659	98.8	2,435,201
October	9,841,002	103.2	330,101	81.2	877,410	91.8	11,048,513	101.3	2,575,411
November	9,430,248	102.2	295,827	72.5	829,925	89.6	10,555,500	100.0	2,460,490
December	9,695,919	101.6	308,465	75.9	833,161	87.1	10,837,545	99.4	2,451,933
Total	102,840,585	91.6	3,227,997	67.4	9,147,567	81.2	115,216,149	89.8	2,203,828
1957									
January	9,829,691	99.0	294,839	77.1	884,232	86.5	11,008,762	97.1	2,485,048
February	8,898,000	99.2	278,000	80.4	811,000	87.8	9,987,000	97.5	2,497,000

Blast Furnace Output

(American Iron and Steel Institute)

	net tons Pig Iron	Ferro-manganese & Spiegel	Total	% Capacity
1947				
Ttl. Yr.	58,507,169	702,561	59,209,730	90.1
1948				
Ttl. Yr.	60,135,941	712,899	60,848,840	90.2
1949				
Ttl. Yr.	53,613,779	592,564	54,206,343	76.8
1950				
Ttl. Yr.	64,810,272	673,896	65,484,168	91.5
1951				
Ttl. Yr.	70,487,380	745,381	71,232,761	98.3
1952				
Ttl. Yr.	61,528,665	629,926	62,158,591	84.2
1953				
Total	74,987,721	855,038	75,842,759	95.5
1954				
Oct.	4,937,436	46,244	4,983,680	71.5
Nov.	5,204,446	52,454	5,256,900	77.9
Dec.	5,526,720	59,793	5,586,513	80.4
Total	58,119,382	568,735	58,688,117	71.6
1955				
Jan.	5,729,404	55,249	5,784,653	81.1
Feb.	5,394,585	48,182	5,442,767	84.8
Mar.	6,406,902	57,049	6,463,951	90.6
Apr.	6,329,927	54,712	6,384,639	92.4
May	6,753,236	51,699	6,804,935	95.4
June	6,495,050	48,735	6,543,878	94.7
July	6,329,393	61,166	6,390,559	89.8
Aug.	6,529,580	71,902	6,601,482	92.5
Sept.	6,653,578	49,788	6,703,366	97.3
Oct.	6,905,280	59,993	6,965,273	97.6
Nov.	6,636,649	62,341	6,698,990	97.0
Dec.	6,887,667	65,849	6,953,516	97.7
Total	77,114,073	868,758	77,800,831	92.7
1956				
Jan.	6,985,945	63,619	7,049,564	97.1
Feb.	6,539,199	63,618	6,602,817	97.2
Mar.	7,083,877	65,566	7,149,443	98.5
Apr.	6,860,583	63,760	6,924,343	98.6
May	6,878,102	47,840	6,929,942	95.8
June	6,387,608	46,981	6,434,589	91.6
July	1,089,518	17,491	1,107,009	15.2
Aug.	5,100,669	41,548	5,142,217	70.8
Sept.	6,873,064	59,584	6,932,648	98.7
Oct.	7,245,650	69,909	7,315,559	100.8
Nov.	6,977,457	58,614	7,036,091	100.1
Dec.	7,268,743	65,841	7,334,584	101.0
Total	75,301,134	664,341	75,965,475	88.9
1957				
Jan.	6,985,945	63,619	7,049,564	97.1

Steel Castings Shipments

(Bureau of Census)

	(Short Tons) Total	For Sale	For Own Use
1950	1,461,667	929,192	374,217
1951	2,101,604	1,507,413	594,191
1952	1,925,116	1,476,352	448,767
1953	1,829,277	1,290,016	431,330
1954			
Aug.	89,590	66,792	22,798
Sept.	88,359	64,722	23,637
Oct.	87,085	64,004	23,081
Nov.	87,659	64,812	22,847
Dec.	93,547	69,843	23,704
Total	1,184,096	880,158	303,938
1955			
Jan.	98,238	75,044	23,194
Feb.	106,430	80,729	25,701
Mar.	127,460	98,926	28,534
Apr.	120,053	92,237	27,816
May	122,465	92,713	29,752
June	133,887	102,457	31,430
July	97,875	71,170	26,705
Aug.	126,406	96,290	30,116
Sept.	140,843	107,622	33,221
Oct.	145,674	110,409	35,265
Nov.	152,381	116,908	35,473
Dec.	158,982	122,201	36,781
Total	1,530,694	1,166,706	363,988
1956			
Jan.	158,618	123,343	35,275
Feb.	165,398	128,598	36,800
Mar.	170,045	130,839	39,206
Apr.	163,708	125,015	38,693
May	178,227	142,025	36,202
June	164,661	129,147	35,514
July	117,984	96,350	21,634
Aug.	159,831	127,001	32,830
Sept.	155,046	121,705	33,341
Oct.	175,630	135,798	39,832
Nov.	164,114	126,900	37,214
Dec.	158,725	125,569	33,156

GALVANIZED SHEET SHIPMENTS

(American Iron & Steel Institute)

(Net Tons)

	1954	1955	1956	1957
Jan.	169,086	211,101	269,464	235,902
Feb.	167,433	199,408	272,997	....
Mar.	180,198	238,649	291,193	....
Apr.	203,312	239,001	266,728	....
May	201,671	235,962	272,741	....
June	200,456	246,940	279,058	....
July	214,349	205,211	*	....
Aug.	207,113	241,863	276,048	....
Sept.	209,765	269,020	256,803	....
Oct.	209,498	260,010	278,637	....
Nov.	195,190	255,692	255,135	....
Dec.	205,561	261,640	239,173	....
Total	2,362,632	2,864,497	2,957,991	....

* Combined with August figures.

SHIPMENTS OF TIN-TERNE PLATE

(American Iron & Steel Institute)

(Net Tons)

	—Hot Dipped— 1956	1957	—Electrolytic— 1956	1957
Jan.	81,034		402,627	492,502
Feb.	77,877		404,193	....
Mar.	133,257		598,129	....
Apr.	138,556		554,575	....
May	70,282		354,204	....
June	84,371		466,060	....
July	*		*	....
Aug.	81,005		408,903	....
Sept.	72,400		396,588	....
Oct.	92,394		415,451	....
Nov.	70,510		325,408	....
Dec.	68,385		288,896	....
Total	950,070		4,615,068	....

* Combined with August figures.

Steel Ingot Operations

(Percentage of Capacity as Reported by American Iron & Steel Institute)

Week Beginning	1954	1955	1956	1957
Jan. 7	75.4	81.2	97.6	98.4
Jan. 14	74.3	83.2	98.6	96.4
Jan. 21	74.1	83.2	99.0	96.6
Jan. 28	75.6	85.0	100.4	97.6
Feb. 4	74.4	85.4	99.3	97.1
Feb. 11	74.4	86.8	99.1	97.7
Feb. 18	74.6	89.1	98.8	97.8
Feb. 25	73.6	90.8	98.8	96.0
Mar. 4	70.7	91.9	99.9	94.2
Mar. 11	69.3	92.9	100.0	92.7
Mar. 18	67.6	94.2	100.6	....
Mar. 25	68.1	93.7	99.5	....
Apr. 1	69.1	94.4	99.6	....
Apr. 8	68.0	95.3	97.7	....
Apr. 15	68.0	94.6	100.9	....
Apr. 22	68.6	94.6	100.2	....
Apr. 29	68.7	95.6	100.5	....
May 6	69.4	96.6	96.4	....
May 13	70.9	97.2	95.2	....
May 20	71.8	96.9	95.3	....
May 27	71.2	96.4	97.3	....
June 3	70.2	95.8	96.3	....
June 10	73.2	94.7	96.7	....
June 17	72.3	96.0	93.4	....
June 24	72.1	95.0	93.0	....
July 1	65.8	71.1	84.9	....
July 8	60.0	85.9	12.3	....
July 15	64.3	91.2	12.9	....
July 22	65.3	91.0	14.6	....
July 29	64.2	90.7	17.0	....
Aug. 5	64.0	86.9	16.9	....
Aug. 12	64.0	89.4	57.5	....
Aug. 19	61.8	90.2	87.5	....
Aug. 26	63.5	90.6	95.8	....
Sept. 2	64.0	93.4	97.0	....
Sept. 9	63.0	93.8	98.7	....
Sept. 16	66.3	95.7	100.6	....
Sept. 23	68.7	96.1	100.6	....
Sept. 30	70.4	97.0	101.6	....
Oct. 7	71.0	96.7	101.8	....
Oct. 14	72.8	96.5	100.9	....
Oct. 21	73.6	98.9	101.4	....
Oct. 28	74.5	100.0	101.2	....
Nov. 4	76.4	99.4	101.3	....
Nov. 11	77.2	99.6	100.6	....
Nov. 18	79.3	99.2	100.2	....
Nov. 25	80.3	100.1	100.1	....
Dec. 2	81.4	97.6	101.1	....
Dec. 9	82.5	100.1	101.3	....
Dec. 16	81.5	100.3	102.0	....
Dec. 23	72.4	96.9	94.3	....
Dec. 30	77.6	95.7	97.3	....

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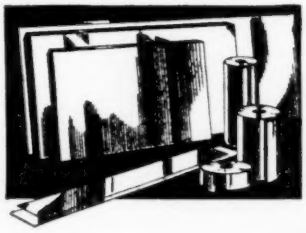

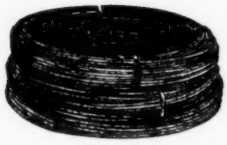

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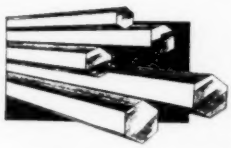

DISTRICT SALES OFFICES

Ansonia, Conn.
Atlanta 3, Ga.
Buffalo 5, N. Y.
Cambridge 42, Mass.
Cedar Rapids, Iowa
Charlotte 2, N. C.
*Chicago 39, Ill.
Cincinnati 2, Ohio
*Cleveland 14, Ohio
Columbus 15, Ohio
*Dallas 25, Texas
Denver 2, Colo.
Detroit 31, Mich.
Houston 2, Texas
Kenosha, Wis.
Los Angeles 17, Calif.
Miami 30, Fla.
*Milwaukee 4, Wis.
Minneapolis 2, Minn.
Newark 2, N. J.
New York 16, N. Y.
*Philadelphia 22, Pa.
Pittsburgh 19, Pa.
*Providence 3, R. I.
Rochester 4, N. Y.
St. Louis 3, Mo.
San Francisco 4, Calif.
Seattle 1, Wash.
Syracuse 2, N. Y.
Torrington, Conn.
Washington 5, D. C.
Waterbury 20, Conn.

General Offices
Waterbury 20, Conn.

In Canada: Anaconda American Brass Limited General Offices:
New Toronto, Ontario

Montreal Office:
909 Dominion Square Building

*Warehouses

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